KC20

GM SOUND KEYBOARD

USER'S MANUAL

KAWAI

Welcome

We'd like to take this opportunity to thank you for purchasing the KAWAI KC20 Synthesizer.

The KC20 is designed to be compact and light in weight for easy portability, yet comes equipped with a full 61-key keyboard. Despite its affordable price, the KC20 delivery high-class sound quality.

And because it is GM-compatible, it also demonstrates solid power as a sound source for computer music and other applications.

You can use the KC20 in a wide range of applications, from desktop music to live performances.

We hope you'll read this manual thoroughly before using your KC20. It will help you get the most out of its outstanding features for many years to come.

Macintosh is a registered trademark of Apple Computer, Inc.
GM is an abbreviation for General MIDI, a recommended standard format to be followed by all manufactures, which specifies how MIDI functions are to be implemented in tone generators.

Features of the KC20

The KC20 is compatible with the GM (General MIDI) System, the new international standard for electronic musical instruments, and is a new generation of multi-timbre GM keyboard.

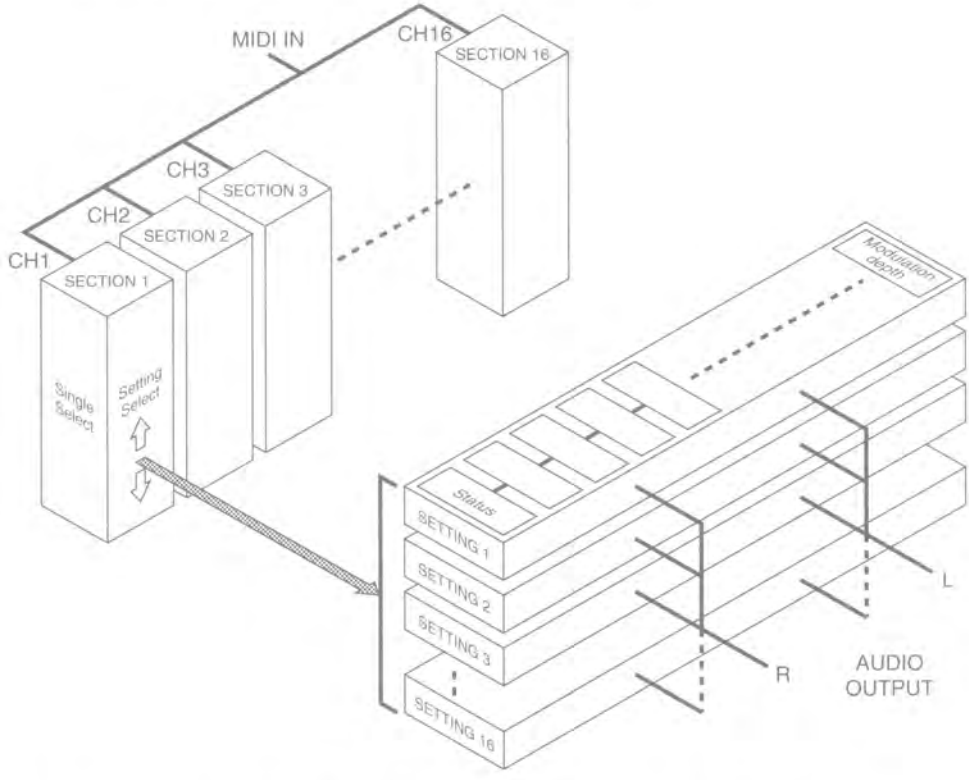
The KC20 contains a high-quality sound source and such top-class specifications as digital reverb within its slim case, which means that it can meet the needs of a wide range of players, from beginners to professionals.

Two Play Modes for Different Needs

The COMPOSE mode offers a variety of multi-timbre settings for composing and arranging, and the PERFORMANCE mode provides a variety of manual play settings for live performances. This ensures flexible support for a wide range of musical activities from desktop music production to live performances.

The COMPOSE Mode — 16-part Performances with MIDI IN

The COMPOSE mode has a maximum 28-voice polyphony, or 16 Sections (including drum Sections). A variable multi-timbre voice allocation system is used to allow independent play of up to 16 parts, allowing you to make full use of the KC20 without having to worry about the number of voices used by each part.



The Performance Mode — True Realtime Operation for Live Play

The PERFORMANCE mode has 64 patches (8 banks x 8 patches) to store in memory the settings for splits, layers, and other tone combinations as well as for the keyboard, the two control wheels, reverb, and other effects. This lets you store frequently used settings in memory, and during live performances you can even call up settings for different songs with just the touch of a button.

A Full-sized Keyboard with a Lightweight and Compact Design

The depth of the keyboard measures a slim 20 cm, which means that it won't take up too much space even in small studios. And because the weight is only a light 4.1 kg, the KC20 can easily be carried to the performance site or the practice studio. Yet despite its small size, the KC20 features a full 61-key keyboard, allowing you to enjoy full-fledged keyboard play at any time, wherever you may be.

Dedicated Computer Interface

The KC20 is equipped with a serial interface that allows it to be connected directly to a Macintosh, IBM, or PC-98 computer without the need for any external MIDI interface or even MIDI cables! With just the KC20, you have a state-of-the-art DTM (desktop music) system.

Rich Tones and High Sound Quality

The KC20 has 160 high-quality tones and seven drum kits built in. Just select the tone you want, and you can enjoy stunning sound quality. A 16-bit digital/analog converter is also used for clear sound quality reproduction.

Create Natural Broadening of Sound

The KC20 comes with six kinds of digital reverb. With this you can recreate the presence and reverberation and natural spaciousness of a live venue like a concert hall.

Performance Data Compatibility

128 single patches and 128 drum tones (seven drum kits) according to GM standards are built in. Therefore you can use virtually any commercially available GM computer performance data for play as-is.

On-board QUICK MIDI system

The KC20 features the QUICK MIDI system, which handles not only transmission of play data but also incorporates external MIDI equipment control functions. The master keyboard functions bring real value to live performance and realtime recording applications.

Reading This Manual

The KAWAI KC20 is designed with a user-friendly interface and a simple system of operation. This means you can start to enjoy playing the KC20 right out of the box.

But this is not all the KC20 has to offer. In order to demonstrate the full potential of the KC20's features, prevent mistakes in operation, and prevent the loss of the settings and data you have worked hard to make, we urge you to read through this manual carefully.

How the Manual is Organized

The manual for the KC20 is divided into six sections, organized as follows:

■ Chapter 1 Introduction

This section gives a brief overview of the KC20 functions and how to hook it up with other devices.

■ Chapter 2: COMPOSE Mode Operation

Describes how to play in the two modes: the PERFORMANCE mode and the COMPOSE mode.

■ Chapter 3: PERFORMANCE Mode Operation

How to make the settings you need to control certain important Section parameters.

■ Chapter 4: SYSTEM Mode Operation

How to make settings relating to the way the KC20 works overall.

■ Chapter 5: About QUICK MIDI

Describes the QUICK MIDI functions, which provide realtime control of external MIDI equipment.

■ Appendices

This contains a chart of the KC20's edit functions, charts of single and drum kit assignments, and other essential operations for using and mastering the KC20.

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Before You Try Out the KC20 (Some Precautions for Use)

To get years of service from your KC20, please read and follow the following important instructions.

- **Location:**

 Avoid
 - Direct sunlight, such as near a window;
 - Temperature extremes, such as directly in front of a heater or out-of-doors;
 - High humidity;
 - Sandy or dusty locations; and
 - Places that are subject to high vibration levels.

- **Power Supply:**
 - Make sure you are using the KC20 with proper power supply, and with the AC adapter that came with it. Do not even think of using it with other adapters or at other voltages.
 - Make sure that everything is properly hooked up before turning on the power. And, make sure that the power is turned off before hooking new things into the system.
 - Try to plug into an outlet that is not also being used by devices that draw a lot of current or generate electrical noise.
 - Unplug the KC20 if you are not going to be using it for an extended period of time.
 - Unplug the KC20 when there's a danger of lightning strikes or other electrical disturbance.

- **Proper Procedure for Turning On the Power**

 When connected to a computer and/or MIDI sequencer, turn on that device first; then turn on the KC20, then any audio devices (instrument amp, stereo system, etc.). Turn the power off in the reverse order.

- **Hooking Up**

 When hooking up external devices to the KC20, turn off the power first on both sides to prevent damage to speakers or amps in the devices.

- **Effects from Other Devices**

 The KC20 is a high-speed, precision microprocessor devices. As such, it is very susceptible to malfunctions due to line noise or voltage spikes and fluctuations. If this occurs, try turning the KC20 off, waiting a few seconds, then turning it on again.

- **MIDI Cables**
 - Be sure to use only standard MIDI cables.
 - MIDI cables are limited to 15m in length. Using cables that are longer than this can induce errors in data transmission and faulty operation.

◆ Handling and Transporting

- Make sure all cables are disconnected during transport.
- Be sure to pull on the end of the plug and not the cable itself when unplugging.
- Use only as much force as is needed with switches and plugs.

◆ Keeping the KC20 in Good Shape

- For regular cleaning, use a soft, dry cloth.
- If the KC20 gets especially dirty, clean it with a mild, neutral detergent and wipe it down with a soft cloth immediately after.
- Whatever you do, don't use benzene-based cleaning solutions or thinners.

◆ Data Backup Batteries

The KC20 is equipped with a special lithium backup battery to maintain data in memory even when the power is turned off. These batteries have a lifetime of five years or more, although this can depend somewhat on operating conditions. We recommend you replace them at about the five-year mark as a precaution.
When it comes time to do this, ask at the store where you made your purchase about the nearest KAWAI Service Center.

◆ Protecting Your Data During Repairs

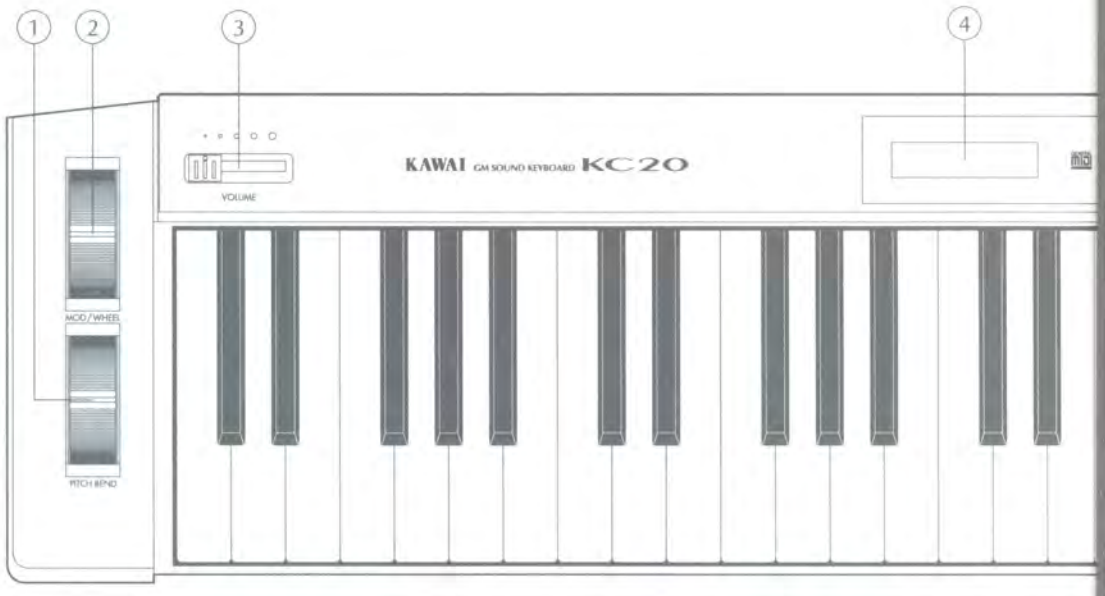
If you have to send out your KC20 for repairs, we recommend you dump all your most important data into another MIDI device ahead of time.
Try as we might, there is always the chance that this data could be lost during the repair process.

◆ Modifications

Don't open up the case and internals, or otherwise try to modify the KC20; you might wind up hurting either yourself or the machine. And you'll void the warranty.

Part Names

Front Panel



① PITCH BEND Wheel
This controller modifies the pitch of the sound being output. Rolling it away from you causes the sound to rise in pitch, and toward you causes it to fall.

② MODULATION Wheel
This controller varies the amount of control assigned by the system or Quick MIDI. Because modulation is normally assigned, this wheel typically controls vibrato.

③ VOLUME Slider
This adjusts the volume of the headphone jack and the output jacks.

④ DISPLAY
This is a 16-character, 2-line liquid-crystal display showing settings and operations on the KC20.

⑤ EXIT Button
This is for returning to the Play mode from an Edit mode.
When in the System Edit mode, pressing this button returns the keyboard to its status before entering the System Edit mode.

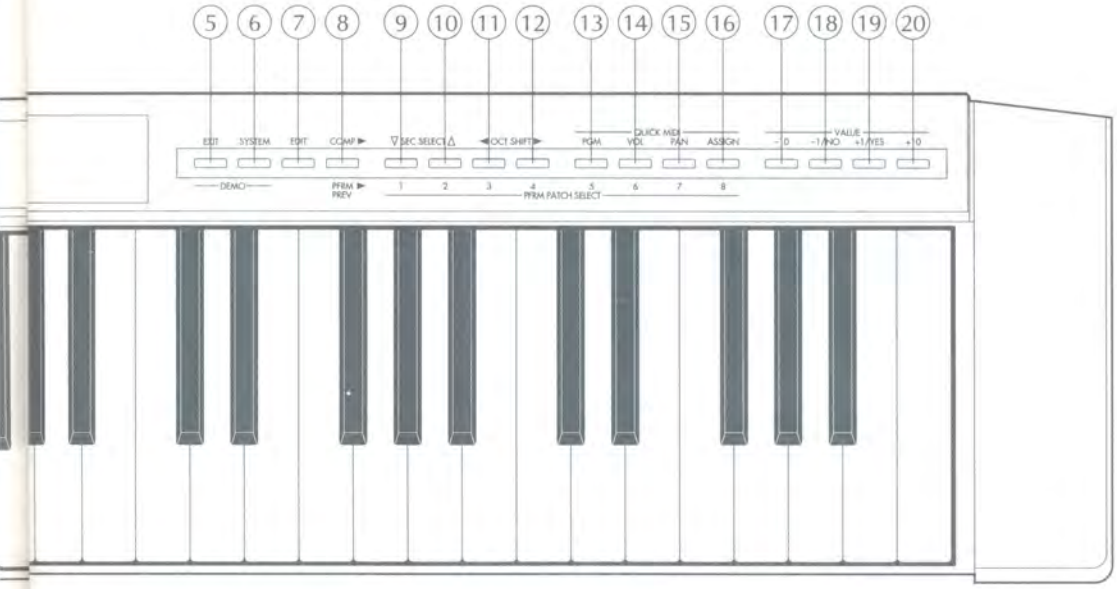
⑥ SYSTEM Button
This button puts you in the System Edit mode. When in SYSTEM edit mode, repeatedly pressing this button will step one-by-one through each SYSTEM edit function.

You can listen to Demo Play by pressing the EXIT and SYSTEM buttons at the same time.

⑦ EDIT Button
This button is for entering the Edit mode for the COMPOSE or PERFORMANCE mode.
When in the Compose Edit or Performance Edit mode, repeatedly pressing this button will step one-by-one through each edit function.

⑧ COMP/PFRM Button
Pressing this button will cause the KC20 to alternate between the COMPOSE mode and the PERFORMANCE mode.
Also, when in the Compose, Performance, or System Edit mode, pressing this button will call up the previous edit function (stepping backwards through the edit functions).

⑨ and ⑩ SEC SELECT Buttons
These buttons are for selecting a Section. The left-hand button selects the next Section, and the right-hand button the previous one. In the PERFORMANCE mode, these buttons can be used only during editing.



⑪ and ⑫ **OCT SHIFT Buttons**

These buttons are for performing octave shifts. The left-hand button shifts the octave down and the right-hand button shifts it up (within the range supported by the KC20). In the PERFORMANCE mode, these buttons can be used only during editing.

In addition, the ⑨, ⑩, and ⑪ buttons can be used to select a song during Demo Play.

⑬ **QUICK MIDI/PGM Button**

This button enters the PGM mode of the Quick MIDI system, which sends out program changes to an external MIDI device.

⑭ **QUICK MIDI/VOL Button**

This button enters the VOL mode of the Quick MIDI system, which controls the volume of an external MIDI device.

⑮ **QUICK MIDI/PAN Button**

This button enters the PAN mode of the Quick MIDI system, which controls panning of an external MIDI device.

⑯ **QUICK MIDI/ASIGN Button**

This button enters the ASSIGN mode for the Quick MIDI system, which assigns functions controlling an external MIDI device.

Quick MIDI cannot be used in the PERFORMANCE Play mode.

⑰, ⑱, ⑲ and ⑳ **SINGLE/VALUE Buttons**

These buttons are used to select Section tones (single).

In an Edit mode, these four buttons set the values for various functions.

Pressing the **+10** or **-10** button increases or decreases the value by ten.

Pressing the **+1/YES** or **-1/NO** button increases or decreases the value by one.

When the value is not numerical, pressing the **+1/YES** or **-1/NO** button selects the value to be set.

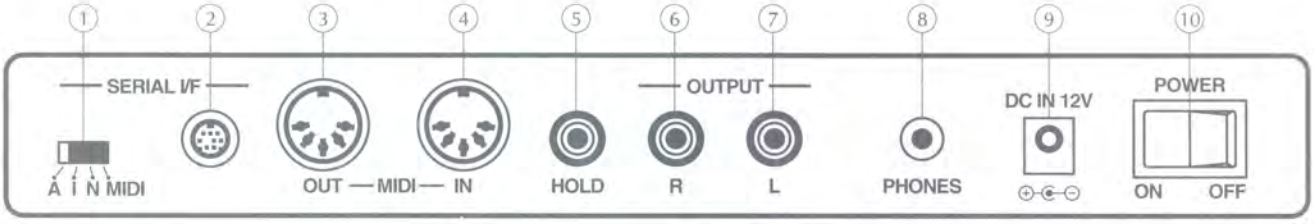
When confirming an operation, press the **+1/YES** button to confirm or the **-1/NO** button to cancel.

⑨ to ⑯, ⑰ and ⑳ **Pfrm patch select Buttons**

These buttons are used to select patches from 11 to 88 when in the PERFORMANCE Play mode.

The buttons are numbered from **1** through **8**, **-10**, and **+10**.

Rear Panel



① SERIAL SELECT Switch

This switch is for selecting the type of computer to which the serial interface ② is to be connected.

- **A** For connection to an Apple Macintosh series computer
- **I** For connection to an IBM PC/AT series computer
- **N** For connection to an NEC PC-98 series computer
- **MIDI** For when the serial interface is not in use

A dedicated serial cable is required for connection to a computer.
The flow of MIDI signals changes depending on whether the serial interface is in use.

② SERIAL INTERFACE

This jack is for direct connection to a computer.

③ MIDI OUT

When the SERIAL SELECT switch ① is set to "MIDI," this jack sends keyboard data and SysEx messages generated by the KC20.
When the SERIAL SELECT switch is at a setting other than "MIDI," this jack outputs (THRU) any MIDI signals generated by the computer via the serial interface ②.

④ MIDI IN

This jack is for receiving signals from other MIDI instruments.

⑤ HOLD

This jack is for connecting a damper or sustain pedal (ex: Kawai F-1).

⑥ and ⑦ OUTPUT (R/L)

These jacks for the connecting the audio output of the KC20 to speakers with built-in amplifiers, or other audio equipment. Output is monaural when the audio device is connected to either R or L alone.

⑧ PHONES

This jack is for plugging in headphones. Use the VOLUME slider to adjust the sound volume.

⑨ DC-IN

This jack is for connecting the AC adapter included with the KC20 keyboard.

For your safety, and the safety of your KC20, use only the supplied AC adaptor unit.

⑩ POWER

This switch turns the power to the keyboard on and off.

Chapter 1 Introduction

1.1 The Stuff That Comes With Your KC20

All the following neat stuff comes with your KC20. Check the box after opening to make sure you got it all.

- One (1) AC adapter
- One (1) stereo audio cable
- Owner's Manual (what you're reading now)

1.2 Let's Get It Together

1) Connections to Audio System

■ OUTPUT Jacks

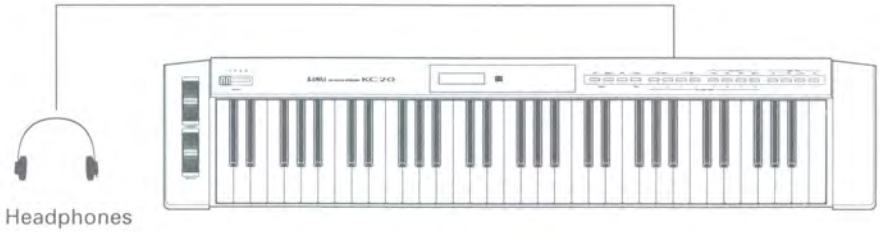
Connect the LINE OUT jacks (L/R) on the rear panel to the appropriate inputs of an instrument amp or audio system.



Speaker amps

■ Headphones

Just plug your headphones directly into the PHONE jack to monitor the sounds coming out of the KC20.



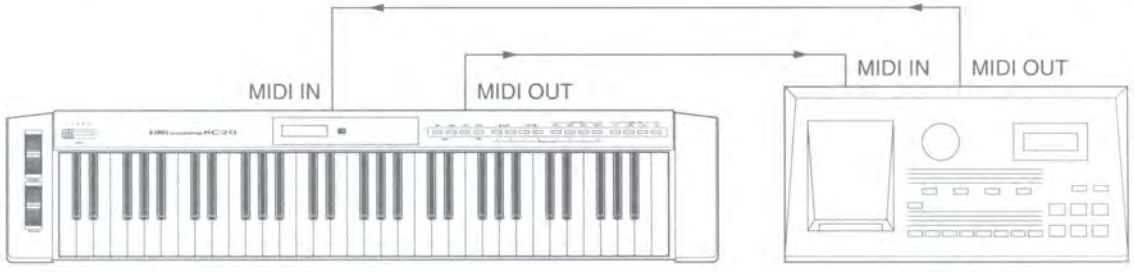
Headphones

2) Hookup with a Digital Sequencer

Just run the MIDI cable from the MIDI OUT jack on the sequencer to the MIDI IN on the KC20.

If you're using a KAWAI Q-80EX (a 32-track sequencer with two MIDI OUT jacks), you can use two MIDI cables to plug the two MIDI OUT jacks on the Q-80EX to two KC20 units. This will let you control up to 32 Sections simultaneously (16 on each KC20).

The sending channels vary according to the settings for these channels made on each KC20.



Q-80EX, etc.

3) Computer Hookup with the Serial Interface

Depending on the setting of the SERIAL SELECT switch on the rear panel ("**MIDI**," "**A**," "**I**," or "**N**"), the KC20 can also double as a MIDI interface for each type of computer. This completely eliminates the need for purchasing a separate MIDI interface card or module!

The flow of MIDI signals changes depending on whether the serial interface is in use ("**A**," "**I**," or "**N**" setting) or not in use ("**MIDI**" setting).

◆ Macintosh Series Computer

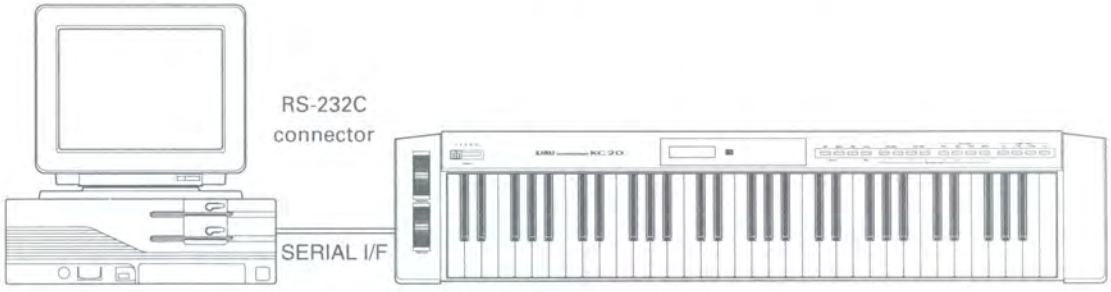
You can hook up the KC20 directly to the modem or printer serial port of a Macintosh series computer. Set the SERIAL SELECT switch on the rear panel to "**M**," and use a DIN 8-pin cable (usually sold for use with printers) to make the connection. It's a good idea to take this manual or the KC20 with you when you purchase the cable, so you can check the pin pattern and make sure you're buying the right type.
When you have the right cord, just run it directly from the modem or printer serial port of your Mac to the SERIAL INTERFACE port of the KC20.



Set the MIDI port clock speed to 1 MHz using the application software (sequencer, etc.) on your Mac.

◆ Connection with a DOS/V or NEC PC-98 Series Computer

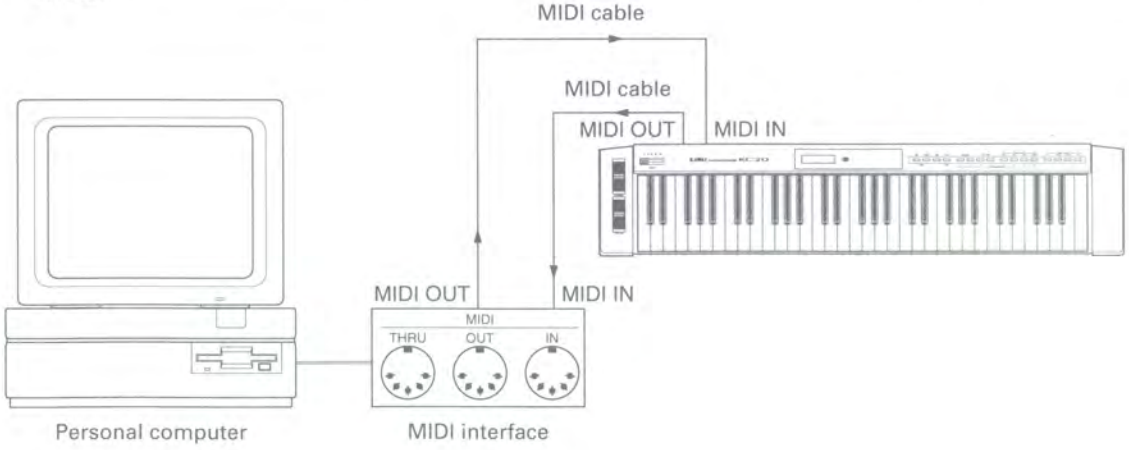
You can hook up the KC20 directly to a DOS/V or NEC PC-98 series computer. Set the SERIAL SELECT switch on the rear panel to "**I**" for a DOS/V computer or to "**N**" for an NEC PC-98, and use an RS-232C cable (RS-232C 25-pin or DIN 8-pin) to connect the SERIAL INTERFACE port on the KC20 to the RS-232C connector on the DOS/V or PC-98 computer.



4) Computer Connection with a MIDI Interface

If you want to connect the KC20 to a computer other than one of the three types already mentioned, you will need to make the connection through a MIDI interface (either external or built-in).

Set the SERIAL SELECT switch on the rear panel of the KC20 to "**MIDI**," and use the MIDI cable to connect the MIDI IN and OUT jack on the MIDI interface to the MIDI IN jack on the KC20.





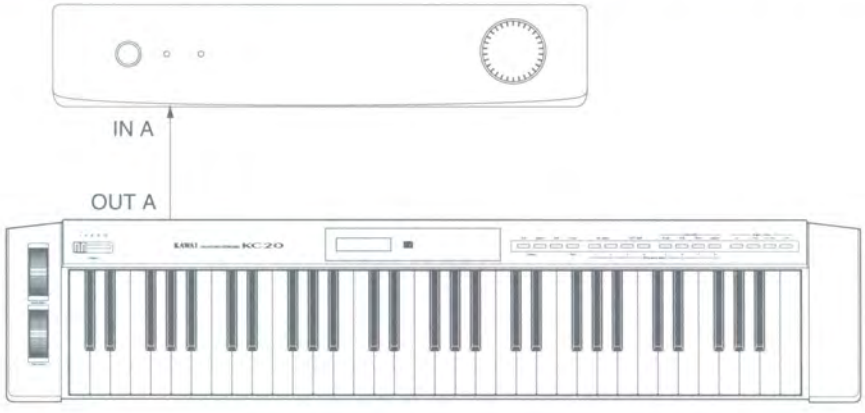
Refer to the owner's manual for your particular MIDI interface to find out how to install it and hook it up to other MIDI devices.



When the SERIAL SELECT switch is set to "MIDI," almost all the button-pressing you do on the KC20 can also be transmitted from the MIDI OUT jack using SysEx messages.

5) Connecting the GMega LX or another KC20

Use MIDI cables to connect the Kawai GMega LX or another KC20 unit. Connect the MIDI OUT connector of the new unit to the MIDI IN A or MIDI IN B connector of the KC20. In this case, all system exclusives can be used to create an even more powerful system.



1.3 Sound source and internal keyboard

Unlike a piano keyboard, which is designed to actually produce the sound, the keyboard on a MIDI digital keyboard instrument is nothing more than an input device for sending to the sound source such performance data as what sound has been played, how much force has been used to play it, and how long it has been played.

This means that although the sound source and the internal keyboard may appear to be a single instrument at first glance, they are actually in a mutually independent relationship and can be separated internally.

However, unlike when a sequencer, master keyboard, or other external controller is connected via a MIDI cable, the internal keyboard is connected by internal circuitry, and data transmission is faster and more reliable.

The KC20 has the same composition as a sound source (GMega) and MIDI master keyboard (COMPOSE mode), coupled with functions designed to maximize master keyboard performance (PERFORMANCE mode and QUICK MIDI mode).

- When in the COMPOSE mode the internal keyboard handles either the currently displayed section receive channel or the unit channel (set with the System Keyboard Channel (page 43) setting under SYSTEM EDIT).
- When in the PERFORMANCE mode, because sections do not incorporate the concept of channels, the unit channel is always used.
- If you want to control all channels through the external controller, use LOCAL OFF to disengage the internal keyboard. Play information from the keyboard will be output to MIDI OUT, allowing control of external sound sources.

1.4 Overview of the Modes in KC20

◆ **PERFORMANCE PLAY MODE**

This is the play mode used with the PERFORMANCE mode. up to 64 PERFORMANCE patches in four sections can be selected.

◆ **COMPOSE PLAY MODE**

Play mode in the COMPOSE mode.
You can make full use of the KC20's 32 Section multi-timbral capabilities using both A and B MIDI IN ports. By "Section," we mean the combination of the various settings defining the tone, effects applied, etc.
In this mode you can select a Single Patch for each Section, MIDI receive channel, volume level, and Section status (ON, OFF, SOLO).

◆ **PERFORMANCE EDIT MODE**

This mode is used to edit PERFORMANCE patches.
For each section you can set the single patch (tone) and setting (01/02) which contains totally 12 parameters such as sound level, pan, reverb depth and section status (ON, OFF, SOLO).

◆ **COMPOSE EDIT MODE**

This mode is where you can set the single patch (tone) and setting (01-16) which contains totally 8 parameters such as sound level, pan and section status (ON, OFF, SOLO).

◆ **SYSTEM MODE**

This is where you make settings like Effect Type/Parameter and Unit Tune that effect the KC20 itself, and others like Receive Channel, Program Change, System Exclusive Change Receive ON/OFF, etc. From this mode, you can also send these internal KC20 settings via MIDI to be stored in an external MIDI device, or reinitialize the KC20 from that device.

◆ **QUICK MIDI MODE**

This mode controls QUICK MIDI systems, providing realtime control of external MIDI equipment.
Four functions are supported: program change, volume control, pan control, and effect control.

1.5 Power Up!

(1) Check all the connections between the KC20 and peripheral devices. Turn down the volume on all playback devices (instrument amp, stereo).

(2) Turn on MIDI keyboard, then KC20, then computer, in that order.

(3) When you press the KC20 **POWER** button to turn it on, you'll see a screen like the one to the right.



(4) After you've turned on the playback devices, adjust the KC20 volume and the playback device volume to get the proper volume level.

1.6 Play the Demo Songs

Now let's listen to the demo songs. The KC20 comes programmed with three demo songs that show off the sparking features that this keyboard has to offer.

(1) Press the **EXIT** and **SYSTEM** buttons at the same time to play the demo songs.

(2) The KC20 has three built-in demo songs. Use the "▽", "△", and "◀" buttons to choose the song number you want to hear.

(3) When Demo Play is finished, press the **EXIT** button. This ends Demo Play and returns the keyboard to the Play mode.

Chapter 2 COMPOSE Mode Operation

The KC20 has two Play modes – the COMPOSE mode and the PERFORMANCE mode.

1. **COMPOSE Mode**
 The COMPOSE mode is used for playing back commercially available songs in GM format, and for desktop music (DTM), when you compose songs yourself.
2. **PERFORMANCE Mode**
 The PERFORMANCE mode is handy for when playing in a band or practicing with the keyboard.



You can switch between the COMPOSE and PERFORMANCE modes with the COMP/PFRM switch.

2.1 COMPOSE Play Mode

After checking all connections (from the KC20 to the personal computer, sequencer, or audio amplifier), turn on the power to the KC20.

After the power is switched on, a message like this appears on the display.



If a message like this appears instead, it means that you are currently in the PERFORMANCE mode, so...

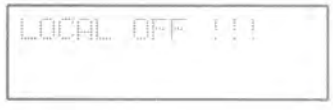
press the **COMP/PFRM** button once. This switches the keyboard to the COMPOSE mode.



The "C" that appears at the top left of the display signifies the COMPOSE mode.



If a message like this appears on the display after you turn on the power,...



the keyboard is in local-off status.

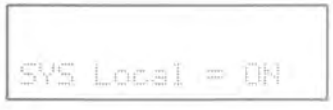
During local-off status, data such as the keyboard's (local) panel operations and keyboard information is not sent to the keyboard's sound source.

Press the **SYSTEM** button until a message like this appears on the display.



Press the **+1/YES** button to change "OFF" to "ON."

Next, press the **EXIT** button to return to the Play mode.



Now you're all set. When you play the keyboard, you should be able to hear what you play. If there is no sound, check the volume settings for the KC20 and the audio amplifier.

1) About the Functions of the COMPOSE Mode

The COMPOSE mode has Sections (parts) numbered from 01 to 16.

These numbers correspond to MIDI channels 1 to 16. Each Section can be thought of as a separate independent instrument, or member of your "MIDI orchestra."

Also, because the KC20 is a GM-compatible keyboard, the drum set is assigned to channel 10, the standard MIDI channel for drums.

Here's how to read the information in the upper line of the display.



① Mode indicator (C = COMPOSE and P = PERFORMANCE)
② Section No. 01 to 16
③ Single No. 001 to 160
④ Single name

The lower line of the display is a MIDI monitor.

It indicates MIDI activity on each of the 16 MIDI channels. This display lets you know when your KC20 is receiving MIDI signals sent from an external device, such as a sequencer. For example, the numeral "1" is displayed when signals for channel 1 are being received, and "2" is shown when signals for channel 2 are received. When the status of the Section is "OFF" (this will be described later), an asterisk ("*") is displayed for the channel.

Now let's take a look at all 16 of the Sections.

- Press the △ button to make the next Section appear on the display.
- Press the ▽ button to display the previous Section.

Try changing the Sections and listening to the results as you play the keyboard.

You can listen to all the tones assigned to each Section.

You're probably getting anxious to start up the sequencer.



Before starting up the sequencer, make sure that the MIDI cable is securely connected.

2) About Drum Kits

The KC20 has seven built-in Drum Kits, as shown in the table below.

Each kit has 128 tones. You can select the ones that are best suited to the music you play.

In the GM format, drums are always assigned to channel 10, but on the KC20 you can assign drums to any channel from 1 to 16.



Assigning the Drum Kit and percussion to different channels (Sections) makes it easier to control the volume balance later.

The Drum Kits have program numbers from 1 to 7.

When signals for program changes are received on the channel (Section) chosen for the Drum Kit, the tone (kit) changes to the corresponding number (DR1 to DR7).

1～7: DR1～DR7 8～14: DR1～DR7

Let's Get Started!

Did all the parts play correctly?

As you're listening to the performance, you may decide you want to make a few changes.

For instance, you may want to change the part for Section 1 from grand piano to electric piano.

2.2 COMPOSE Mode Editing

Here's how you can do editing in the COMPOSE mode.

Enter the Edit mode by pressing the **EDIT** button.

To get out of the Edit mode, just press the **EXIT** button.

When you're in the Edit mode, pressing the **EDIT** button calls up the next page on display, and pressing the **COMP** button displays the previous page.

There are four button you can use to change values — **-10**, **-1/NO**, **+1/YES**, and **+10**. Here's how these buttons work:

+10 and -10 buttons

These increase or decrease the displayed value by ten.

+1/YES and -1/NO buttons

These increase or decrease the value by one. Also, when the value is not a numerical setting but rather a type of setting (as for "Section Status"), these buttons select the value to be set.



Parameters that you change in the Edit mode are automatically stored in the KC20's memory, without having to perform any special SAVE or WRITE operations.

1) Single Select (000 to 160 and DR1 to DR7)

Use the △ and ▽ buttons to choose the Section you want to change, and then press the **EDIT** button. As an example, let's say that this message is shown on the display.

```
C01 001 GrPiano
   Single= 001
```

Here, select the tones (single or drum kit) to be set for each Section.

Pressing the **+1/YES** button should change "001" to "002," and "GrPiano" to "BrPiano." Pressing **-1/NO** causes the number to move back by one.

```
C01 002 BrPiano
   Single= 002
```

The **+10** button advances the number by ten, and the **-10** button makes it go back by ten.

Make your selection from between 000 to 160 or from DR1 to DR7.

Try listening to all 160 types of tones in the KC20.

This will let you experience for yourself all of the terrific sound programming that the KC20 has.

2) Setting Select (01~16)

Pressing the Edit button again causes a messages like this to appear on the display.

```
C01 001 GrPiano
    Seting=  01
```

In this mode you can select a "setting" which contains totally 8 parameters such as Status, Level, Pan, Reverb, Transpose etc.

(The value of each setting can be edited in 3) ~ 10) modes.)

You can select one from 01 to 16.

3) Section Status (OFF, ON, or SOLO)

Pressing the **EDIT** button again causes a message like this to appear on the display.

```
C01 002 BrPiano
s02 Status=  ON
```

This display lets you choose whether the tones set for each Section are played when MIDI signals are received.

If the value is set to "ON," the Section is played when MIDI information is received from an external source. The Section will not be played when set to "OFF."

When set to "SOLO," all sounds other than the currently displayed Section are stopped, resulting in solo play (just as its name implies).

Use the **-1/NO** and **+1/YES** buttons to select the status you want.

```
C01 002 BrPiano
s02 Status=SOLO
```

When the status is set to "OFF," the MIDI monitor on the main screen for the COMPOSE mode appears like this:

* **An asterisk ("*") indicates that the status for that Section is "OFF."**

When the status for any Section is set to "SOLO," asterisks appear for all the other Sections.



Solo mode is especially is handy for confirming settings such as pan pot and reverb levels for the various Sections.

4) Section Level (000 to 127)

Pressing the **EDIT** button again causes a message like this to appear on the display.

```
C01 002 BrPiano
s02 Level = 100
```

This lets you set the level (volume) for each of the Sections.

You can set the level to any value from 000 to 127. Naturally, a setting of 000 means that no sound is played at all.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to make the desired setting.

5) Section Pan (L64 to L01, 00, R01 to R63, and RND)

Pressing the **EDIT** button again causes a message like this to appear on the display.

```
C01 002 BrPiano
s02 Pan   =  00
```

This lets you set the panning (the position of the sound between stereo speakers) for each of the Sections.

You can set the pan to any value from "L64" (left) to "00" (center) to "R63" (right), or to "RND" (random).

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to set the pan.

"RND" is a mode whereby the position of the sound changes randomly each time a key is played, with the jumps controlled entirely by the KC20.

Try out the "RND" setting. The sound jumps around to either side every time you play a key.

You can use your imagination to devise some interesting effects.



The pan setting does not function when a drum kit is assigned to the Section.

6) Section Reverb (Lo and Hi)

Pressing the **EDIT** button again causes a message like this to appear on the display.

```
C01 002 BrPiano
s02 Rev   =  Hi
```

This lets you adjust the depth of the reverb for each Section.

Use the **-1/NO** and **+1/YES** buttons to select either "Lo" (shallow) or "Hi" (deep).

7) Section Transpose (-24 to 00 to 24)

Pressing the **EDIT** button again causes a message like this to appear on the display.

```
C01 002 BrPiano
s02 Trans =  00
```

This lets you adjust the key for each Section.

Each unit of the value corresponds to a transposition of one half-step, so a value of "12" transposes the key up one octave, and "-12" shifts it down an octave.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to set the key.

About Octave Shift

You can use the ◀ and ▶ buttons to perform an octave shift within a range of three octaves up or down. When you do this, the display uses characters like the following to indicate the octave shift.

```
C02→002 BrPiano
s02 Trans =  00
```

- Three octaves up
- Two octaves up
- One octave hi
- (No display) No octave shift
- One octave down
- Two octaves down
- Three octaves down



All Sections are shifted when you use this function.
Please note that changing the Section Transpose or Octave Shift value does not cause the KC20's keyboard to transmit MIDI notes in a different key. If you wish to transpose the KC20's MIDI output, you must change the System Key Shift setting. (see "System Edit Mode", Page 42)

8) Section Tuning (-64 to 00 to 63)

Pressing the **EDIT** button again causes a message like this to appear on the display.

```
C01 002 BrPiano
s02 Tune   =  00
```

This lets you adjust the pitch for each Section.

A setting of -64 corresponds to approximately -50 cents (one half-step), and 63 corresponds to approximately 50 cents. This lets you perform fine adjustments for pitch.

By setting the same tone for two or more Sections and varying (detuning) the pitch by a slight amount, you can obtain a pleasing chorus effect. Try it!

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to set the pitch.

9) Section Bend Range (00 to 12)

Pressing the **EDIT** button again causes a message like this to appear on the display.

```
C01 002 BrPiano
s02 BndRng=  00
```

This lets you set the range of the pitch that changes according to the pitch bend for each Section.

Each unit of the value corresponds to a half-step range of pitch.

If the value is set "00", pitch bend messages will have no effect. A value of "12" obtains a pitch bend range of one octave up or down.

To simulate guitar string bending, as in blues or rock guitar, a value of "2" (one full step) should be about right.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to set the amount of range for pitch bend.

10) Section Modulation Depth (00 to 63)

Pressing the **EDIT** button again causes a message like this to appear on the display.

```
C01 002 BrPiano
s02 ModDep=  00
```

This lets you set the depth of vibrato that changes according to the modulation for each Section.

The value "00" has no effect. A value of "63" obtains the maximum effect.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to set the amount of change for vibrato.

There is no effect when set to "00," and no vibrato is performed even if the data from the sequencer contains modulation data.

Command Summary

To enter the Edit mode	→	*EDIT button*
To escape the Edit mode	→	*EXIT button*
To switch Sections	→	*△ and ▽ buttons*
To go to next display	→	*EDIT button*
To go back to previous display	→	*COMP button*
To change parameter values	→	*-10, -1/NO, +1/YES, and +10 buttons*

Because the built-in battery provides backup for any parameters you change in the Edit mode, these changes remain in memory even if the power is switched off. The service life of the battery is approximately five years, but this may vary somewhat according to usage conditions.

If the content of memory begins to show some abnormalities, it may be time to replace the battery.

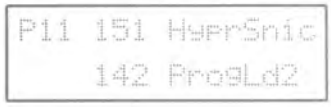
Chapter 3 PERFORMANCE Mode Operation

3.1 PERFORMANCE Play Mode

When in the COMPOSE mode, press the **COMP/PFRM** button.

You need to press the **COMP/PFRM** button in order to enter the PERFORMANCE mode. This **COMP/PFRM** button is always used to move between the COMPOSE and PERFORMANCE modes. (You can't move between modes like this when you're in the Edit mode.)

When you're in the PERFORMANCE mode, the display shows a message like this.



1) About the Function of the PERFORMANCE Mode

As you can see from the display, two tones are combined in the PERFORMANCE mode. (You may know this as "dual" or "layering.")

The KC20 refers to each of these two tones in the combination as Section 01 and Section 02.



For assignments for Drum Kit Sections, see the explanatio of Drum Kits in "About COMPOSE Play Mode Secitons."

The KC20 has 64 patches (programs), numbered from P11 to P88.

Bank 1 P11----------P18 = 8 Patch
Bank 2 P22----------P28

↓ ↓

Bank 8 P81----------P88

To switch patches you can use the **PFRM PATCH SELECT** buttons (1 to 8), the **-1/NO** and **+1/YES** buttons to change the units digit, or the **-10** and **+10** buttons to change the tens digit (the bank).

Practice switching patches and listening to the tones for a variety of patches.

Did you find any patches that catch your fancy? If you want to make some changes, then you need to enter the PERFORMANCE Edit mode.

To enter this Edit mode, press the **EDIT** button, just like you do for the COMPOSE mode.

The following explanation uses Section 01, but everything is exactly the same for Section 02 as well.

3.2 PERFORMANCE Edit Mode

Press the **EDIT** button. (To get out of the Edit mode, just press the **EXIT** button.)

Parameters that you change in the Edit mode are automatically stored in the KC20's memory, without having to perform any special save or write operations.

1) Single Select (001 to 160 and DR1 to DR7)

A message like this is shown on the display.

```
P01 151 HyprSnic
   Single= 151
```

Here, you may select the tone (single) to be set for Section 01.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to select the tone.

If you want to edit Section 02, use the SEC SELECT (△ ▽) buttons to select Section 02.

2) Setting Select (01/02)

Pressing the Edit button again causes a messages like this to appear on the display

```
P01 151 HyprSnic
   Seting=  01
```

Here you can select a "setting" which contains totally 12 parameters such as Mode, Level, Pan, Reverb, Transpose etc.

(The value of each setting can be edited in 3) ~ 14) modes.)

You can select one from 01/02.

3) Mode (OFF, ON, OCT1, OCT2, CHRS1, and CHRS2)

Pressing the **EDIT** button again causes a message like this to appear on the display.

```
P01 151 HyprSnic
s01 MODE  =  00
```

Here, you may choose whether you want the sound for each Section to be on or off, and make your selection from among the following four effects.

Octave 1:

The original single tone, combined with the same tone one octave higher (an interval of one octave)

Octave 2:

The original single tone, combined with the same tone one octave higher and one octave lower (an interval of two octaves)

Chorus 1:

The tone combined with tones three cents higher and lower (an interval of six cents). This gives a medium chorus effect.

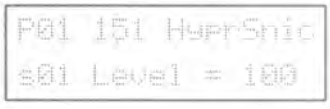
Chorus 2:

The tone combined with tones six cents higher and lower (an interval of 12 cents). This gives a deeper chorus effect.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to select the mode you want.

4) Performance Level (000 to 127)

Pressing the **EDIT** button again causes a message like this to appear on the display.



This lets you set the level for each of the Sections.

You can set the level to any value from 000 to 127. Naturally, a setting of 000 means that no sound is played at all.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to set the level you want.

5) Performance Pan (L64 to L01, 00, R01 to R63, and RND)

Pressing the **EDIT** button again causes a message like this to appear on the display.



This lets you set the panning for each of the Sections.

You can set the pan to any value from "L64" (left) to "00" (center) to "R63" (right), or to "RND" (random).

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to set the pan.

"RND" is a mode whereby the position of the sound changes randomly each time a key is played, with the jumps controlled entirely by the KC20.



The pan setting does not function when a drum kit is assigned to the Section.

6) Performance Reverb (Lo and Hi)

Pressing the **EDIT** button again causes a message like this to appear on the display.



This lets you adjust the depth of the reverb for each Section.

Use the **-1/NO** and **+1/YES** buttons to select either "Lo" (shallow) or "Hi" (deep).

7) Performance Transpose (-24 to 00 to 24)

Pressing the **EDIT** button again causes a message like this to appear on the display.



This lets you adjust the key for each Section.

Each unit of the value corresponds to a transposition of one half-step, so a value of "12" transposes the key up one octave, and "-12" shifts it down an octave.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to set the key.

About Octave Shift

You can use the ◀ and ▶ buttons to perform an octave shift within a range of three octaves up or down. When you do this, the display uses characters like the following to indicate the octave shift.



- ⌃ Three octaves up
- 〉 Two octaves up
-] One octave hi
- (No display) No octave shift
- [One octave down
- 〈 Two octaves down
- ⌄ Three octaves down



All Sections are shifted when you use this function.

8) Performance Tuning (-64 to 00 to 63)

Pressing the **EDIT** button again causes a message like this to appear on the display.



This lets you adjust the pitch for each Section.

A setting of -64 corresponds to approximately -50 cents (one half-step), and 63 corresponds to approximately 50 cents. This lets you perform fine adjustments for pitch.

By setting the same tone for two Sections and varying (detuning) the pitch of each Section by a slight amount, you can obtain pleasing chorus effect. Try it!

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to set the pitch.

9) Performance Bend Range (00 to 12)

Pressing the **EDIT** button again causes a message like this to appear on the display.



This lets you set the range of the pitch that changes according to the pitch bend for each Section.

Each unit of the value corresponds to a half-step range of pitch.

If the value is set "00", pitch bend messages will have no effect. A value of "12" obtains a pitch bend range of one octave up or down.

To simulate guitar string bending, as in blues or rock guitar, a value of "2" (one full step) should be about right.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to set the amount of change for pitch bend.

10) Performance Modulation Depth (00 to 63)

Pressing the **EDIT** button again causes a message like this to appear on the display.



This lets you set the depth of vibrato that changes according to the modulation for each Section.

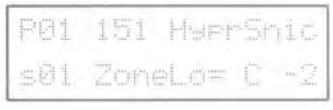
If the value is set to "00", modulation messages will have no effect. A value of "63" obtains the maximum effect.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to set the amount of change for vibrato.

There is no effect when set to "00," and no vibrato is performed even if the data from the sequencer contains modulation data.

11) Performance Zone Lo (C2 to G8)

Pressing the **EDIT** button again causes a message like this to appear on the display.



This sets the lower limit for playable notes in the Section.

For example, if you make the setting "ZoneLo = C3," no notes lower than C3 (middle C) will be played.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to set the zone.

12) Performance Zone Hi (C2 to G8)

Pressing the **EDIT** button again causes a message like this to appear on the display.

```
P01 151 HyprSnic
s01 ZoneHi= G 8
```

This sets the upper limit for playable notes in the Section.

For example, if you make the setting "ZoneHi = C3," no notes higher than C3 (middle C) will be played.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to set the zone.

Some Specific Examples of Settings for Zone Lo and Hi

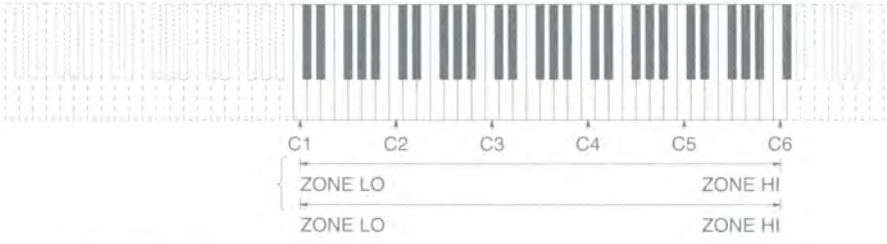
Example 1: Split

If you set Zone Hi for Section 01 to B3 and Zone Lo for Section 02 to C4, you can play notes lower than B3 on Section 01 and notes higher than C4 on Section 02.



Example 2: Layer

If you set Zone Lo and Hi to the same key for both Sections, you can play two tones with the same key.



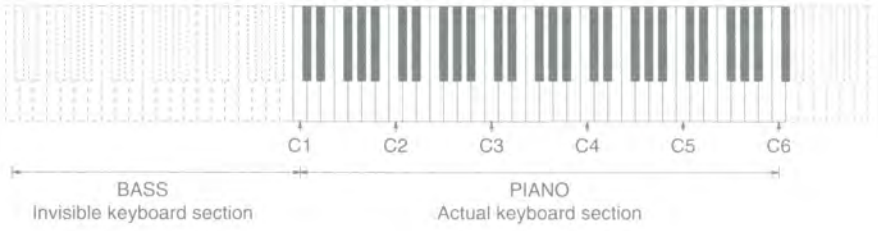
Example 3: Split/Layer

If you set Zone Lo and Hi for Sections 01 and 02 to slightly different values, you can achieve layered play with the central part of the keyboard and split play with the two ends of the keyboard.

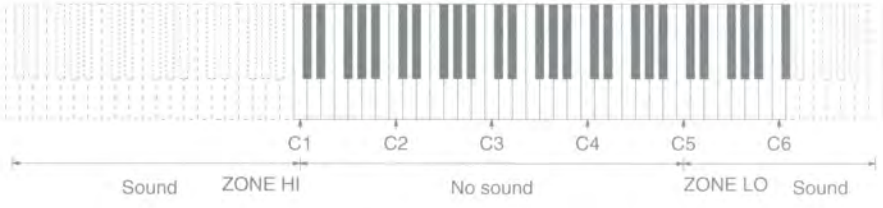


Example 4: Invisible Keyboard

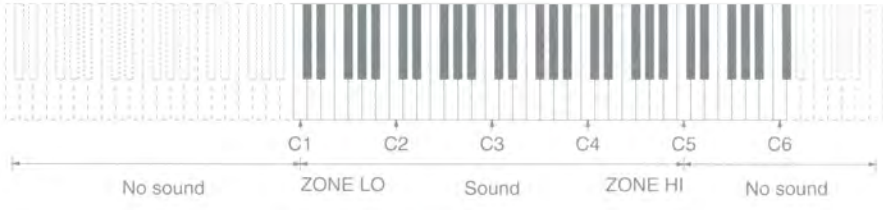
If you make the following settings, you can use the entire keyboard range for live piano playing on one Section, while your sequencer (acting as an "Invisible Keyboard") plays bass notes on the other Section.



When Zone Lo Is Higher Than Zone Hi



Normal (Zone Lo is less than or equal to Zone Hi)



13) Performance Velocity Switch (ALL, SOFT, and LOUD)

Pressing the **EDIT** button again causes a message like this to appear on the display.

```
P01 151 HyperSnic
s01 VeloSW=  ALL
```

We've already seen how two Sections — that is, two tones (single) — are assigned in the PERFORMANCE mode.

Performance Velocity Switch lets you make settings for switching between two tones according to the velocity (i.e., how hard the key is struck). For example, if you make the setting "VeloSW = ALL" for both Sections, both tones are played no matter how hard or soft you strike the keyboard.

If you make the setting "VeloSW = SOFT" for Section 01 and the settings "VeloSW = LOUD" for Section 02, Section 01 will only play when you strike the keys gently and Seciton 02 will only play when you strike them with force.

You can use this to find a wide range of applications.

Example 1:

P01 Single = 049
Strings VeloSW = SOFT
P02 Single = 062
BrsSec VeloSW = LOUD

With these settings, the keyboard plays sweet strings when you finger the keys lightly and powerful brass when played forcefully.

Example 2:

P01 Single = 001
GrPiano VeloSW = ALL
P02 Single = 049
Strings VeloSW = LOUD

With these settings, the keyboard plays only piano when you strike the keys softly, and piano combined with strings when struck with force.

Using the ▽ and △ buttons to select the Sections, try out a variety of different settings.

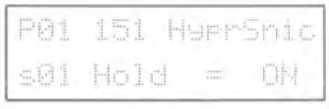
The point at which the switch in tones takes place is set in the System Edit mode, which is described later on.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to select "ALL," "SOFT," or "LOUD."

The threshold of playing force (velocity) at which this switch in tones takes place is set in the System Edit mode, which is described later on. (see "System Velocity Switch", Page 44)

14) Performance Hold (ON and OFF)

Pressing the **EDIT** button again causes a message like this to appear on the display.



This lets you set whether hold data (sent from the sustain pedal or or received via MIDI) is accepted or ignored.

When set to "OFF," for instance, the sustain pedal and MIDI hold messages will have no effect.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to select either "ON" or "OFF."

Command Summary



To enter the Edit mode → *EDIT button*
To escape the Edit mode → *EXIT button*
To switch Sections → *△ and ▽ buttons*
To go to next display → *EDIT button*
To go back to previous display → *COMP button*
To change parameter values → *-10, -1/NO, +1/YES, and +10 buttons*
To make an octave shift for all Sections → *△ and ▽ buttons*

Chapter 4 SYSTEM Mode Operation

4.1 About MIDI

In order to make the most of the KC20's potential, there are a few basic things you should know about MIDI.

1) What is MIDI?

MIDI (pronounced "middy") stands for Musical Instrument Digital Interface. It is a standard for interfaces that control electronic musical instruments such as synthesizers and sound modules. Most electronic instruments today are equipped with MIDI ports, and the standard is being applied around the world.

In the MIDI standard, all the actions that are used in a synthesizer performance are translated into standard digital signals that describe what note was played on the keyboard, for how long, when bender was applied and released, and so on.

These messages are sent along a MIDI cable to other MIDI devices that can read and play back these messages. You might say MIDI instruments can "talk" to one another.

Instruments that conform to the MIDI standard typically have two kinds of ports: IN and OUT.

MIDI IN

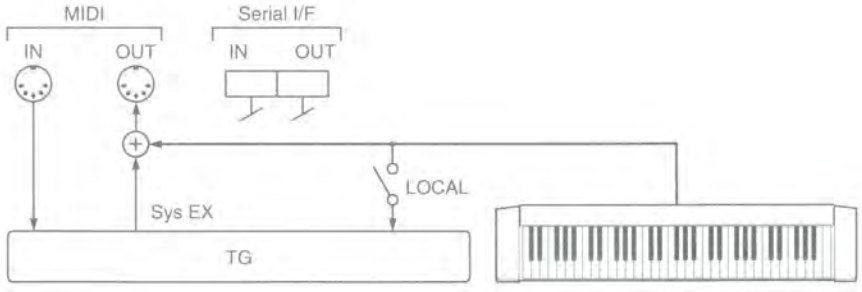
Receives MIDI signals transmitted by external MIDI devices.

MIDI OUT

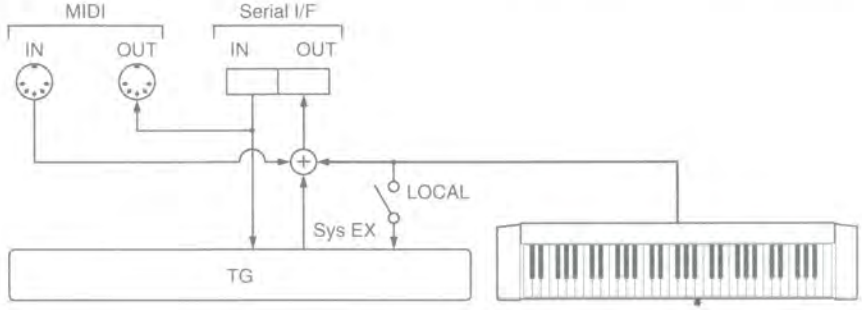
Sends MIDI signals to external MIDI devices.

In fact, the KC20 has two MIDI IN ports, with a signal routing as shown below.

When set to MIDI



When set to A, I, N



System

2) MIDI Messages

- **MIDI Channel**

 You can link and control many MIDI-capable instruments at once with MIDI messages. To keep them all straight, each instrument is given a number from 1 to 16. This number is added to the front of every MIDI message that gets sent, so that it's readily apparent what instrument is supposed to play that message, and it's called the "MIDI channel number."

 There are also "multi-timbral" instruments (like the KC20) that can assign one Section (part) to each channel, and so play each Section like an independent instrument.

- **Mode**

 Mode is important when you are transmitting or receiving MIDI data. There are two modes, Poly and Mono, that control whether performance massages sent to the MIDI receive channels are received polyphonically or monophonically.

 There is also an indicator for Omni On/Off, If it's On, the KC20 will play all MIDI messages on all channels, regardless of what the actual receive channel setting is.

- **Note Messages**

 This is the most basic of the messages by which MIDI transmits musical performance data.

 Each message contains information about which key was pressed (Note Number), how hard (Velocity), and exactly when it was pressed (Note On) and released (Note Off).

- **Note Number**

 Each key on the keyboard has been assigned a number, called its "Note Number." Middle C (C3) has a note number of 60, and this increases by one for every half-step up the scale, or decreases by one for every half-step down. Note Number 1-127 correspond then to all the notes from C2 to G8 on the keyboard, in that order.

- **Velocity**

 This message transmits how hard the key was struck.

- **Release Velocity**

 This message transmits how sharply you let up on the key. It's also sometimes called the "Off Velocity."

- **Pressure**

 After you have struck a key, but before you release it, you can add interesting effects that are controlled by the amount of pressure applied to that key.

 This message transmits that information. It's also called "Aftertouch."

- **Program Change**

 Most MIDI devices these days, complicated as they are, come equipped with "programs" that store and remember for later use a certain set up, certain tones, and certain parameter settings. A controlling device can send a message to switch between these programs on a controlled device. Naturally enough, this is called a "Program Change" message.

Since the MIDI standard is not very explicit about Program Change numbers (except to say that they are numbered from 0 to 127), the way these numbers correspond to tones stored in memory will be different for different MIDI instruments.

- **Control Change**

 MIDI devices can deal with a lot more than just Note On and Off messages; there's also Volume and Vibrato, Hold, Damper Pedal and Soft Pedal On/Off, and Pressure, just to name a few. These are encoded in the form of Control Change messages. (Pitch Bend messages make for very dense streams of data, and so there is a separate message type just for pitch bend data.)

- **Pitch Bend**

 This message describes how far the pitch bend wheel is moved. The effect of a pitch bend wheel movement can be set differently on every synthesizer (usually with an adjustment called "Pitch Bend Range" or something similar). So the effect of a Pitch Bend message will also be different on different synths, and will depend on this setting.

- **System Exclusive Messages**

 MIDI is a unified world standard, true, but each instrument manufacturer also has their own special features they would like to implement within the MIDI specification to give their instruments new capabilities. This kind of proprietary, outside-of-the-MIDI-standard data (called "System Exclusive messages") makes it possible to swap tones between instruments of the same type or manage tone data with a computer.

- **Local Control On/Off**

 Local Control means the messages sent from the keyboard to control the sound module within the MIDI instrument itself. Turning this to Off sends all data from the keyboard directly to the MIDI OUT port, bypassing the internal tone generator and so not making a sound. Meanwhile, the internal sound module can still be played by signals coming in the MIDI IN port. This is useful when you want to an external device to control a keyboard and use it like a sound source, or use just the keyboard to control other MIDI keyboards.

- **All Notes Off**

 This sends a Note Off to all currently sounding notes. Very useful when for some reason the Note Off message didn't get through and a note or notes becomes "stuck."

- **Active Sensing**

 This message helps prevent stuck notes caused by a bad cable or connection.

- **Reset**

 This message initializes the device to its power on settings.

- **Common**

 This message contains info about song select and position pointer when playing in sync with a sequencer and/or drum machine.

- **Real Time**

 This message transmits timing clock and start/stop commands when playing in sync with a sequencer and/or drum machine.

3) Implementation Charts

MIDI device can only transmit and receive the messages they have in common. That is, MIDI will not give a device the ability to do something (say, aftertouch) which it wasn't already designed to do. And it just doesn't make sense to give every device the capability to do everything the MIDI standard allows; nobody would be able to afford them. So if, for example, a device that can't do aftertouch receives an Aftertouch message, it simply ignores it.

Every MIDI device come with something called a "MIDI Implementation Chart" that summarizes what data that device is capable of "implementing" or acting on. By matching up the Implementation Charts of two different devices, you can see at a glance what kinds of messages they both can use, and so what messages can be received and transmitted.

4) Drum Kits

Drum Kits can handle a variety of sounds all at once. With only 16 channels to go around, you can't be giving every percussion instrument its own channel. So instead, up to 128 rhythm instruments are gathered together into one channel and each instrument is assigned a Note number (or numbers) that plays it. That's called a Drum Kit.

There are seven different Drum Kits in one Bank on the KC20. Each kit is assembled with a certain music genre in mind, such as "Standard," "Power," and so on.

4.2 System Edit Mode

This section describes the overall settings for the KC20. When in a Play mode (either the COMPOSE mode or the PERFORMANCE mode), you can enable the System Edit mode by pressing the **SYSTEM** button.

1) System Reset

Press the **SYSTEM** button. A message like this appears on the display.



Pressing the **+1/YES** button at this time resets all of the parameters for the KC20 to their factory default values. Be warned that any settings you have made in the COMPOSE or PERFORMANCE modes will be lost.

If you're totally dissatisfied with what you have, and want to go back to the beginning, press the **+1/YES** button. The display shows this message.



To reset the keyboard to its factory defaults, press the **+1/YES** button again. The display shows this message.



If you change your mind when the display shows "SYS Reset = SURE?," then press the **-1/NO** button. The display then shows this message.



2) System Effect Type (REV1 to REV6)

Pressing the **SYSTEM** button again causes a message like this to appear on the display.



This lets you select the type of reverb to be used in the COMPOSE and PERFORMANCE modes. There are six selections, numbered REV1 to REV6.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to select the reverb type.

Listen to each reverb type to determine which one sounds best for your music.

3) System Reverb Time (001 to 010)

Pressing the **SYSTEM** button again causes a message like this to appear on the display.



This is used to adjust the length of time for the reverb effect.

You can make the setting within the range of 01 (short) to 10 (long).

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to set the reverb time.

4) System Pre-delay (000 to 010)

Pressing the **SYSTEM** button again causes a message like this to appear on the display.

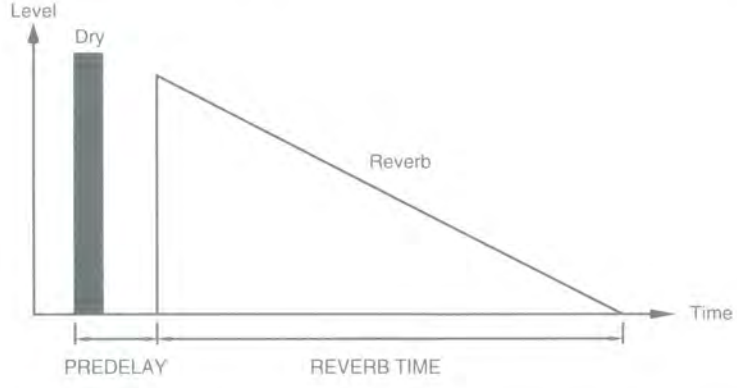
```
C01 002 BrPiano
SYS PREdly=  001
```

This is used to adjust the pre-delay (the interval between the time the sound starts and the time when reverb starts — the initial reaction time).

You can set the pre-delay time within the range of 00 (fast) to 10 (slow).

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to set the pre-delay time.

Adding a pre-delay of a certain length can give a sense of spatial depth to your music. Experiment with the pre-delay and reverb time settings to find the best effect for your music. The following figure shows the relationship between pre-delay and reverb time.



5) System Depth Lo (001 to 128)

Pressing the **SYSTEM** button again causes a message like this to appear on the display.

```
C01 002 BrPiano
SYS DpthLo=  001
```

Do you remember the "Rev = Hi/Lo" setting in the COMPOSE and PERFORMANCE Edit modes?

The System Depth Lo is used for fine adjustment of the Reverb Lo setting.

You can set the depth of reverb within the range of 01 (small reverb) to 10 (large reverb). Any Sections which are set to Lo Reverb Depth (in COMPOSE or PERFORMANCE mode) will use the reverb depth value which has been set by the System Depth Lo parameter.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to set the amount of reverb.

6) System Depth Hi (001 to 128)

Pressing the **SYSTEM** button again causes a message like this to appear on the display.

```
C01 002 BrPiano
SYS DpthHi=  065
```

This is used for fine adjustment of the Reverb Hi setting.

You can set the depth of reverb within the range of 01 (small reverb) to 10 (large reverb). Any Sections which are set to Hi Reverb Depth (in COMPOSE or PERFORMANCE mode) will use the reverb depth value whic has been set by the System Depth Hi parameter.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to set the amount of reverb.

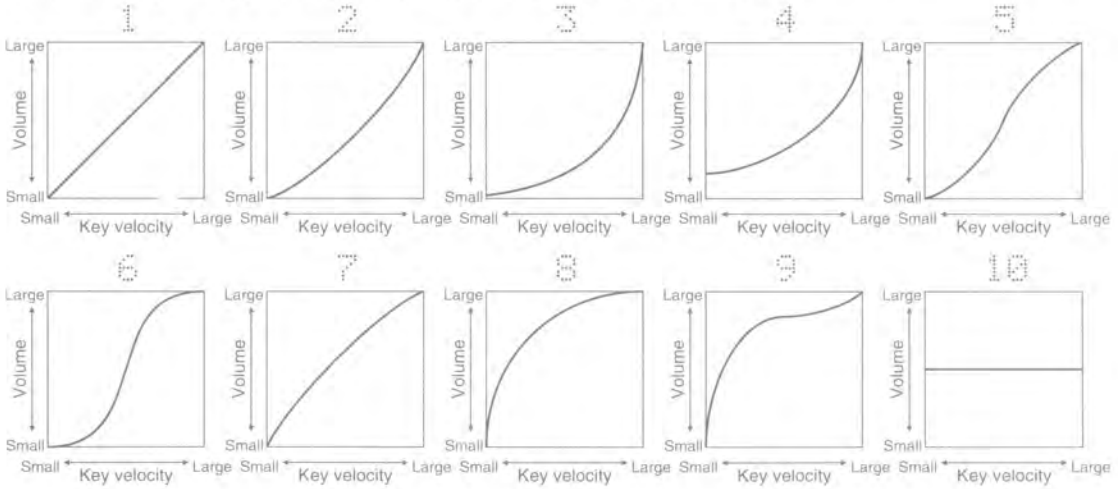
7) System Velocity Curve (01 to 10)

Pressing the **SYSTEM** button again causes a message like this to appear on the display.

```
C01 002 BrPiano
SYS VelCrv=   01
```

This is used to select one of ten types of velocity curves. Select the velocity curve which feels best for your playing style.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to select the curve.



8) System Key Shift (-12 to 00 to 12)

Pressing the **SYSTEM** button again causes a message like this to appear on the display.

This is for adjusting the overall key of the KC20, including the key range transmitted via the MIDI OUT.

```
C01 002 BrPiano
SYS KyShft=   00
```

You can set the key in half-tone steps within the range of -12 (one octave lower) to 00 (no change) to 12 (one octave higher).

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to set the key.

9) Settings Local Control (OFF or ON)

Pressing the **SYSTEM** button again causes a message like this to appear on the display.

This sets the connection for the built-in sound source and the built-in keyboard controller.

Local Control On:

The KC20's keyboard and internal sound source are connected (normal mode).

```
C01 002 BrPiano
SYS Local =   ON
```

Local Control Off:

The KC20's keyboard and internal sound source are disconnected, and the sound source is played only by data input from MIDI IN.

Use the **-1/NO**, and **+1/YES** buttons to select either "OFF" or "ON."

Please be aware that when "Local = OFF," there will be no sound from the internal sound source when you play the keyboard on the KC20. When the SERIAL SELECT switch is set to "MIDI," however, performance data is output from MIDI OUT, so even if "Local = OFF", it is possible to play an external sound source connected to KC20's MIDI OUT.

10) System Tuning (-64 to 00 to 63)

Pressing the **SYSTEM** button again causes a message like this to appear on the display.



This is used to fine-tune the overall pitch for the KC20.

You can use this to tune the KC20 to an acoustic piano or other accompanying instrument. This setting affects all Sections.

The range for pitch tuning is -64 (approximately one half-step lower) to 00 to 63 (approximately one half-step higher).

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to set the pitch.

11) System Receive Program (OFF or ON)

Pressing the **SYSTEM** button again causes a message like this to appear on the display.



This is used to make settings for receiving MIDI program change signals.

When set to "ON," singles, Sections, and Patches can be switched by program change data.

When set to "OFF," program change data received from an external sequencer or other device will be ignored.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to select either "ON" or "OFF."

12) System Unit Channel (01 to 16)

Pressing the **SYSTEM** button again causes a message like this to appear on the display.



This is used to select the transmission channel for SysEx messages or Quick MIDI messages.

Any channel from 01 to 16 can be used, but this setting should normally be adjusted to match the receive channel of the receiving device(s).

This is for setting the velocity point, or threshold, at which the sounds are switched.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to set the channel.

13) System Keyboard Channel (SEC or UNIT)

Pressing the **SYSTEM** button again causes a message like this to appear on the display.



This is used to set the transmission channel for the built-in keyboard.

When set to "SEC," the transmission is made on the channel for the selected Section (01 to 16).

When set to "UNIT," transmission is made on the system unit channel.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to select either "SEC" or "UNIT."

In the PERFORMANCE mode, transmission should normally be set to the unit channel.

14) System Velocity Switch (000 to 127)

Pressing the **SYSTEM** button again causes a message like this to appear on the display.



As you may recall, the PERFORMANCE mode has the setting "VeloSW = ALL/SOFT/LOUD."

For example, if this parameter is set to 64, any tones set for "LOUD" are played when a velocity stronger than 64 is sent, and any tones set for "SOFT" are played when a weaker velocity is sent.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to set the velocity point.

15) System Assign (000 to 119)

Pressing the **SYSTEM** button again causes a message like this to appear on the display.



This is used to select the control number sent by Quick MIDI "Assign."

By assigning "007" (volume), for example, you can control the volume of the external MIDI device with the Modulation wheel.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to select the control number.

16) System Snapshot

Pressing the **SYSTEM** button again causes a message like this to appear on the display.



This is used to send the set programs (tones) and data on volume from MIDI OUT.

To send this data to a device such as an external sequencer or data filer, press the **+1/YES** button.

This message appears on the display.



If this is all right, press the **+1/YES** button again.

This message will appear on the display.



Data transmission is complete.

If you decide to cancel transmission, press the **-1/NO** button.

This message will appear on the display.



System

The Snapshot sends MIDI Volume Control and Program Change (tone select) data for all 16 Sections in the COMPOSE mode, essentially taking a "snapshot" of the KC20's current setup.

If you record this data at the start of the sequence data that you create, every time you play back that song, it will play with the tones and volume balance which was in effect when the song was created. If you always follow this procedure, it will not be necessary to re-edit the KC20 every time you switch to a different song.

When "SYS RcvPrg" is set to "OFF," no program changes will be performed.

17) System Dump all

Pressing the **SYSTEM** button again causes a message like this to appear on the display.

```
C01 002 BrPiano
SYS DumpAL=EXEC?
```

This is used to send all of the setting data for the KC20 (as SysEx data) from MIDI OUT to an external MIDI device for storage. This data includes all settings for COMPOSE, PERFORMANCE and SYSTEM modes.

To send this data to a device such as an external sequencer or data filer, press the **+1/YES** button.

This message will appear on the display.

```
C01 002 BrPiano
SYS DumpAL=SURE?
```

If this is all right, press the **+1/YES** button again.

This message will appear on the display.

```
SYS COMPLETED!!!
```

Data transmission is complete.

If you decide to cancel transmission, press the **-1/NO** button.

This message will appear on the display.

```
SYS Canceled !!!
```

18) System Dump Section

Pressing the **SYSTEM** button again causes a message like this to appear on the display.

```
C01 002 BrPiano
SYS DumpSC=EXEC?
```

This is used to send all of the Section settings for the KC20 (as SysEx data) from MIDI OUT to an external MIDI device for storage.

To send this data to a device such as an external sequencer or data filer, press the **+1/YES** button.

This message will appear on the display.

```
C01 002 BrPiano
SYS DumpSC=SURE?
```

If this is all right, press the **+1/YES** button again.

This message will appear on the display.

```
SYS COMPLETED!!!
```

Data transmission is complete.

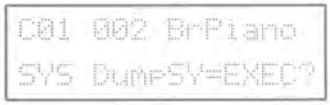
If you decide to cancel transmission, press the **-1/NO** button.

This message will appear on the display.

```
SYS Canceled !!!
```

19) System Dump System

Pressing the **SYSTEM** button again causes a message like this to appear on the display.



This is used to send all of the system settings for the KC20 (as SysEx data) from MIDI OUT to an external MIDI device for storage.

To send this data to a device such as an external sequencer or data filer, press the **+1/YES** button.

This message will appear on the display.



If this is all right, press the **+1/YES** button again.

This message will appear on the display.



Data transmission is complete.

If you decide to cancel transmission, press the **-1/NO** button. This message will appear on the display.





Be sure to make backups!
We recommend performing frequent data dumps to save the settings you make on your KC20 onto a personal computer, sequencer or other device. Doing this will enable you to restore the important settings you make whenever they may be needed, or in case they are ever accidentally changed or damaged.

Command Summary



In the System Edit mode, you use:
—the SYSTEM button to show the next display,
—the COMP button to show the previous display,
—the -10, -1/NO, +1/YES, and +10 buttons to change values,
—the +1/YES button to confirm operations,
and
—the -1/NO to cancel operations.

Chapter 5 About Quick MIDI

Quick MIDI is a function that allows the KC20 to output MIDI signals (such as program changes and control changes) for direct control of external MIDI devices.

Conventional MIDI systems output a MIDI signal when an event (such as program or control change) occurs on the master side, which means that actions on the receiving side are always triggered by events on the sending side. This form of control is less than ideal.

The use of Quick MIDI allows MIDI signals to be sent without any dependence on KC20 events, which means that you can control the MIDI system independently.

Quick MIDI cannot be used when in the PERFORMANCE mode.

Let's take a look at the functions that Quick MIDI has to offer.

5.1 About the Function of the Quick MIDI

1) Quick MIDI Program (001 to 128)

Pressing the **PGM** button causes a message like this to appear on the display.

```
C01 002 BrPiano
QM  Progrm=  001
```

This is used to make program changes for a MIDI device connected to the KC20, such as a sound source.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to select the program number.

A program number (from 001 to 128) will be output from MIDI OUT.

Quick MIDI settings will have no effect on programs or Section settings in the KC20, unless you are using the "Echo" or "Soft Thru" function on your sequencer. In that case, the Quick MIDI messages would be echoed back to the KC20's MIDI IN.

2) Quick MIDI Volume (000 to 127)

Pressing the **VOL** button causes a message like this to appear on the display.

```
C01 002 BrPiano
QM  Volume=  000
```

This is used to control the volume for a MIDI device connected to the KC20, such as a sound source.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to set the volume.

Volume data from 000 to 127 can be sent.

If you inadvertently send a QM Volume setting of "000" (volume 0) to the external MIDI device, the external device will generate no sound output, and it may be difficult to track down the cause.

3) Quick MIDI Pan (R63 to R01, 00, and L01 to L63)

Pressing the **PAN** button causes this message to appear on the display.



This is used to control panning for the external device.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to set the pan value.

You can set the pan to any value from "L63" (left) to "00" (center) to "R63" (right).

Devices that do not support panning (control No. 10) cannot be controlled.

4) Quick MIDI Control Assign (000 to 127)

Pressing the **ASSIGN** button causes this message to appear on the display.



This lets you select the control function for controlling the external device.

Use the **-10**, **-1/NO**, **+1/YES**, and **+10** buttons to select the control number.

Control function data (from 001 to 128) is output from MIDI OUT.

The selected control function can be controlled with the MODULATION wheel.

5.2 About Quick MIDI Data Transmission Channels

1) When the Keyboard Channel is set to "Section"

When "SYS KybdCh" is set to "SEC," the transmission channel is made to be the same as the currently selected Section channel.

S01 (Section 1) → **Sent on channel 1**

S16 (Section 16) → **Sent on channel 16**

At this time, you can use the ▽ and △ buttons to switch Sections in sequence, allowing control of all 16 channels for the external device.

2) When the Keyboard Channel is set to "Unit"

When "SYS KybdCh" is set to "UNIT," the transmission channel is made to be the same as the channel set with "SYS UnitCh = 01."

If the external device uses only one channel, setting "UnitCh" to match the external device allows Quick MIDI to be used even when the Section channel is set to any value from 01 to 16.

In the PERFORMANCE mode, transmission is always on the UNIT channel.

COMPOSE Edit Reference Chart

		OCT shift	-10 -1/No +1/Yes +10
Editing function	**Description**	**Display message**	**Value**
Single Select	Selection of tone	C01 001 GrPiano Single= 001	000~160, DR1~DR7
Setting Select	Select a Setting for a Section	C01 001 GrPiano Seting= 01	01~16
Section Status	Setting of the sound for each Setting	C01 002 BrPiano s02 Status= ON	ON, OFF, SOLO
Section Level	Volume setting for each Section	C01 002 BrPiano s02 Level = 100	000~127
Section Pan	Position (pan) setting for each Setting	C01 002 BrPiano s02 Pan = 01	L64~L01, 00, R01~R63, RND
Section Reverb	Adjustment of amount of reverb for each Setting	C01 002 BrPiano s02 Rev = Hi	LO, Hi
Section Transpose	Key setting (in half-step units)	C01 002 BrPiano s02 Trans = 00	-24~00~24
Section Tuning	Fine adjustment of pitch	C01 002 BrPiano s02 Tune = 00	-64~00~63
Section Bend Range	Setting for pitch bend range	C01 002 BrPiano s02 BudRng= 00	00~12
Section Modulation Depth	Adjustment of the modulation effect	C01 002 BrPiano s02 ModDep= 00	00~63

System Edit Reference Chart

		OCT shift	-10 -1/No +1/Yes +10
Editing function	**Description**	**Display message**	**Value**
System Reset	Initialization of KC20 settings	C01 002 BrPiano SYS Reset =EXEC?	**+1/YES, -1/NO**
System Effect Type	Selection of type of reverb	C01 002 BrPiano SYS EFtype= REV	REV1~REV6
System Reverb Time	Adjustment of reverb time	C01 002 BrPiano SYS RVtime= 007	001~010
System Pre-delay	Adjustment of pre-delay time	C01 002 BrPiano SYS PRdly= 001	000~010
System Depth Lo	Fine adjustment of the Reverb Lo setting	C01 002 BrPiano SYS DpthLo= 001	001~128
System Depth Hi	Fine adjustment of the Reverb Hi setting	C01 002 BrPiano SYS DpthHi= 065	01~10
System Velocity Curve	Selection of the type of velocity curve	C01 002 BrPiano SYS VelCrv= 01	01~10
System Key Shift	Overall transposition for the KC20	C01 002 BrPiano SYS KyShft= 00	-12~00~12
System Local Control	Connection of the KC20 keyboard and internal sound generator	C01 002 BrPiano SYS Local = ON	OFF, ON
System Tuning	Fine tuning of the overall pitch for the KC20	C01 002 BrPiano SYS Tune = 00	-64~00~63
System Receive Program	Setting to enable/disable reception of program change signals	C01 002 BrPiano SYS RcvPrg= ON	OFF, ON
System Unit Channel	Selection of transmission channel for exchange data with external device	C01 002 BrPiano SYS UnitCh= 01	01~16
System Keyboard Channel	Setting for KC20 transmission channel selection method	C01 002 BrPiano SYS KybdCh= SEC	SEC, UNIT
System Velocity Switch	Setting for velocity switch break point	C01 002 BrPiano SYS VelSW = 120	000~127
System Assign	Selection of MIDI control number assigned to MODULATION wheel	C01 002 BrPiano SYS Assign= 001	000~119
System Snapshot	Transmission of programs and volume settings for the 16 Sections	C01 002 BrPiano SYS Snap =EXEC?	**+1/YES, -1/NO**
System Dump All	Transmission of all settings	C01 002 BrPiano SYS DumpAL=EXEC?	**+1/YES, -1/NO**
System Dump Section	Transmission of Section settings	C01 002 BrPiano SYS DumpSC=EXEC?	**+1/YES, -1/NO**
System Dump System	Transmission of system settings	C01 002 BrPiano SYS DumpSY=EXEC?	**+1/YES, -1/NO**

Quick MIDI Reference Chart

		PGM VOL PAN ASIGN	-10 -1/No +1/Yes +10
Editing function	**Description**	**Display message**	**Value**
Quick MIDI Program	Quick MIDI program change for external device	C01 002 BrPiano QM Progrm= 001	001~128
Quick MIDI Volume	Quick MIDI volume control for external device	C01 002 BrPiano QM Volume= 000	000~127
Quick MIDI Pan	Quick MIDI pan control for external device	C01 002 BrPiano QM Pan = R63	R63~R01, 00, L01~L63
Quick MIDI Control Assign	Quick MIDI control of functions assigned to system for the external device	C01 002 BrPiano QM CNT001= 000	000~127

KC20 SINGLE PATCH LIST

No.	Voice	No.	Voice	No.	Voice	No.	Voice
1	GrPiano	41	Violin	81	SquareLd	121	FretNoiz
2	BrPiano	42	Viola	82	Saw Ld	122	BrthNoiz
3	ElGrand	43	Cello	83	CaliopLd	123	Seashore
4	HnkyTonk	44	Contra	84	Chiff Ld	124	BrdTweet
5	ElPiano 1	45	TremStrg	85	CharanLd	125	Telphone
6	ElPiano 2	46	Pizzicto	86	Voice Ld	126	Helicptr
7	Hrpschrd	47	Harp	87	Fifth Ld	127	Applause
8	Clavi	48	Timpani	88	Bass &Ld	128	Gunshot
9	Celesta	49	StrgEns1	89	NewAgePd	129	AtkStrig
10	Glocken	50	StrgEns2	90	Warm Pd	130	ProgLd1
11	MusicBox	51	SynStrg1	91	PolySyPd	131	FunkSE1
12	Vibes	52	SynStrg2	92	Choir Pd	132	FunkSE1d
13	Marimba	53	AahChoir	93	Bowed Pd	133	SawPad
14	Xylophon	54	OohChoir	94	Metal Pd	134	SqrPad
15	TubulBel	55	SynChoir	95	Halo Pd	135	12stGtr
16	Dulcimer	56	Orch Hit	96	Sweep Pd	136	HousBass
17	DrawOrgn	57	Trumpet	97	Rain	137	EP&Bass
18	PercOrgn	58	Trombone	98	SoundTrk	138	Bass&Ld2
19	RockOrgn	59	Tuba	99	Crystal	139	83Organ1
20	ChrcOrgn	60	Mute Trmp	100	Atmosphr	140	83Organ2
21	ReedOrgn	61	FrenchHr	101	Bright	141	SexyVoic
22	Acordion	62	BrasSect	102	Goblin	142	ProgLd2
23	Harmnica	63	SynBras1	103	Echoes	143	SynPizz
24	TangoAcd	64	SynBras2	104	SciFi	144	PchBD&SD
25	NylonGtr	65	SprnoSax	105	Sitar	145	RolDrSet
26	SteelGtr	66	Alto Sax	106	Banjo	146	DstGtSet
27	JazzGtr	67	TenorSax	107	Shamisen	147	DreamPd
28	CleanGtr	68	Bari Sax	108	Koto	148	GtFeedBk
29	Mute Gtr	69	Oboe	109	Kalimba	149	ChorsGtr
30	Ovrdrive	70	EnglHorn	110	Bagpipe	150	BaroqStr
31	Distortd	71	Bassoon	111	Fiddle	151	HyprSnic
32	Harmnics	72	Clarinet	112	Shanai	152	WowSynt1
33	WoodBass	73	Piccolo	113	TnklBell	153	AtckBass
34	FngrBass	74	Flute	114	Agogo	154	BrassPad
35	PickBass	75	Recorder	115	Stl Drum	155	DeepPad
36	Fretless	76	PanFlute	116	WoodBlok	156	MariVibe
37	SlapBas1	77	Bottle	117	TaikoDrm	157	MegaBeat
38	SlapBas2	78	Shakhach	118	MelodTom	158	Hrmnica2
39	SynBass1	79	Whistle	119	SynthTom	159	WowSynt2
40	SynBass2	80	Ocarina	120	RevCymbl	160	Pia&WBas

Drum Key Assign

No.	Key Name	STANDARD	ROOM	POWER	ELECTRO	BOB	JAZZ	ORCHSTR
0	C-2	BOB BD	X	X	X	X	X	X
1	C#-2	BOB Rim	X	X	X	X	X	X
2	D-2	BOB SD	X	X	X	X	X	X
3	D#-2	BOB LoTom2	X	X	X	X	X	X
4	E-2	BOB CloseHH.	X	X	X	X	X	X
5	F-2	BOB LoTom1	X	X	X	X	X	X
6	F#-2	BOB MidTom2	X	X	X	X	X	X
7	G-2	BOB OpenHH	X	X	X	X	X	X
8	G#-2	BOB MidTom1	X	X	X	X	X	X
9	A-2	BOB HiTom2	X	X	X	X	X	X
10	A#-2	BOB Cym.	X	X	X	X	X	X
11	B-2	BOB HiTom1	X	X	X	X	X	X
12	C-1	BOB Cowbell	X	X	X	X	X	X
13	C#-1	BOB HiConga	X	X	X	X	X	X
14	D-1	BOB Midconga	X	X	X	X	X	X
15	D#-1	BOB LowConga	X	X	X	X	X	X
16	E-1	BOB Maracas	X	X	X	X	X	X
17	F-1	BOB Clabes	X	X	X	X	X	X
18	F#-1	MONDO BD	X	X	X	X	X	X
19	G-1	Gate SD	X	X	X	X	X	X
20	G#-1	PowerTomLow2	X	X	X	X	X	X
21	A-1	PowerTomLow1	X	X	X	X	X	X
22	A#-1	PowerTomMid2	X	X	X	X	X	X
23	B-1	PowerTomMid1	X	X	X	X	X	X
24	C0	PowerTomHi2	X	X	X	X	X	X
25	C#0	PowerTomHi1	X	X	X	X	X	X
26	D0	X	X	X	X	X	X	X
27	D#0	HighQ						CloseHH
28	E0	Slap						Pedal HH
29	F0	Scratch Push						Open HH
30	F#0	Scratch Pull						SidCym1
31	G0	Sticks						
32	G#0	Square Click						
33	A0	Metronome Click						
34	A#0	Metronome Bell						
35	B0	Acoustic BD 2						Orch. BD2
36	C1	Acoustic BD 1		MONDO BD	Elec.BD	BOB BD	Jazz BD	Orch. BD1
37	C#1	Side Stick				BOB Rim		
38	D1	Acoustic SD 1		Gate SD	Elec.SD	BOB SD	Brush Tap	Orch. SD
39	D#1	HandClap			EFF Clap		Brush Slap	Castanets
40	E1	Acoustic SD 2			Gated SD		Brush Swirl	Orch. SD
41	F1	Low F Tom	Room Tom Low2	PowerTomLow2	Elec.Lo Tom2	BOB LoTom2		Timpani F
42	F#1	CloseHH				BOB CloseHH.		Timpani F#
43	G1	Hi F Tom	Room Tom Low1	PowerTomLow1	Elec.Lo Tom1	BOB LoTom1		Timpani G
44	G#1	Pedal HH				BOB CloseHH.		Timpani G#
45	A1	Lo Tom	Room Tom Mid2	PowerTomMid2	Elec.Mid Tom2	BOB MidTom2		Timpani A
46	A#1	Open HH				BOB OpenHH		Timpani A#
47	B1	Lo-Mid-Tom	Room Tom Mid1	PowerTomMid1	Elec.Mid Tom1	BOB MidTom1		Timpani B
48	C2	Hi-Mid-Tom	Room Tom Hi2	PowerTomHi2	Elec.Hi Tom2	BOB HiTom2		Timpani c
49	C#2	TopCym.				BOB Cym.		Timpani c#
50	D2	High Tom	Room Tom Hi1	PowerTomHi1	Elec.Hi Tom1	BOB HiTom1		Timpani d
51	D#2	SidCym.						Timpani d#
52	E2	ChinaCym.			ReverseCym.			Timpani e
53	F2	RideBell						Timpani f
54	F#2	Tambourine						
55	G2	SplashCym.						
56	G#2	Cowbell				BOB Cowbell		
57	A2	TopCym2						Orch. Cym2
58	A#2	Vibraslap						
59	B2	SidCym2						Orch. Cym1
60	C3	Hi Bongo						
61	C#3	Lo Bongo						
62	D3	Mute Hi conga				BOB HiConga		
63	D#3	Open Hi Conga				BOB Midconga		
64	E3	Lo Conga				BOB LowConga		
65	F3	Hi Timbale						
66	F#3	Lo Timbale						
67	G3	Hi Agogo						
68	G#3	Lo Agogo						
69	A3	Cabasa						
70	A#3	Maracas				BOB Maracas		
71	B3	Short Whistle						

No.	Key Name	STANDARD	ROOM	POWER	ELECTRO	BOB	JAZZ	ORCHSTR
72	C4	Long Whistle						
73	C#4	Short Guiro						
74	D4	Long Guiro						
75	D#4	Clabes				BOB Clabes		
76	E4	Hi Wood Block						
77	F4	Lo Wood Block						
78	F#4	Mute Cuica						
79	G4	Open Cuica						
80	G#4	Mute Triangle						
81	A4	Open Triangle						
82	A#4	Shaker						
83	B4	Jingle Bell						
84	C5	Belltree			Echo Gras			
85	C#5	Castanets						
86	D5	MuteSurdo						
87	D#5	OpenSurdo						
88	E5	Elec.BD	X	X	X	X	X	Applause
89	F5	Elec.SD	X	X	X	X	X	X
90	F#5	Elec.Lo Tom2	X	X	X	X	X	X
91	G5	Elec.Lo Tom1	X	X	X	X	X	X
92	G#5	Elec.Mid Tom2	X	X	X	X	X	X
93	A5	Elec.Mid Tom1	X	X	X	X	X	X
94	A#5	Elec.Hi Tom2	X	X	X	X	X	X
95	B5	Elec.Hi Tom1	X	X	X	X	X	X
96	C6	ReverseCym.	X	X	X	X	X	X
97	C#6	Brush Tap	X	X	X	X	X	X
98	D6	Brush Slap	X	X	X	X	X	X
99	D#6	Brush Swir	X	X	X	X	X	X
100	E6	Jazz BD	X	X	X	X	X	X
101	F6	Orch. BD2	X	X	X	X	X	X
102	F#6	Orch. BD1	X	X	X	X	X	X
103	G6	Orch. SD	X	X	X	X	X	X
104	G#6	Timpani F	X	X	X	X	X	X
105	A6	Timpani F#	X	X	X	X	X	X
106	A#6	Timpani G	X	X	X	X	X	X
107	B6	Timpani G#	X	X	X	X	X	X
108	C7	Timpani A	X	X	X	X	X	X
109	C#7	Timpani A#	X	X	X	X	X	X
110	D7	Timpani B	X	X	X	X	X	X
111	D#7	Timpani c	X	X	X	X	X	X
112	E7	Timpani c#	X	X	X	X	X	X
113	F7	Timpani d	X	X	X	X	X	X
114	F#7	Timpani d#	X	X	X	X	X	X
115	G7	Timpani e	X	X	X	X	X	X
116	G#7	Timpani f	X	X	X	X	X	X
117	A7	Orch. Cym2	X	X	X	X	X	X
118	A#7	Orch. Cym1	X	X	X	X	X	X
119	B7	Applause	X	X	X	X	X	X
120	C8	Room Tom Low2	X	X	X	X	X	X
121	C#8	Room Tom Low1	X	X	X	X	X	X
122	D8	Room Tom Mid2	X	X	X	X	X	X
123	D#8	Room Tom Mid1	X	X	X	X	X	X
124	E8	Room Tom Hi2	X	X	X	X	X	X
125	F8	Room Tom Hi1	X	X	X	X	X	X
126	F#8	EFF Clap	X	X	X	X	X	X
127	G8	Echo Gras	X	X	X	X	X	X



The "No." entries in the chart indicate MIDI note numbers. The percussion patches are the names written in the "STANDARD" column, and the numbers can be obtained by adding "1" to the numbers under "No." in the chart.

PERFORMANCE PATCH LIST

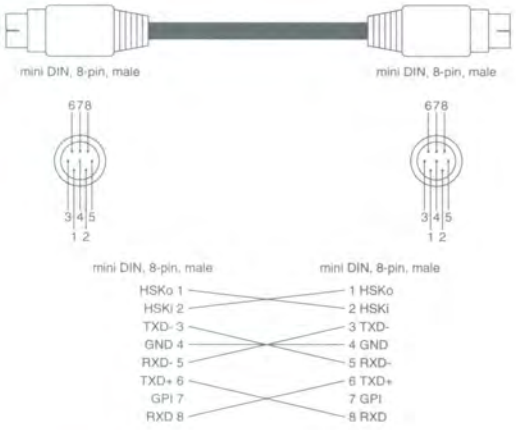
Pfrm Patch No.		Section 1		Section 2	
		Single No.	Single Name	Single No.	Single Name
BANK 1	11	151	HyprSnic	142	ProgLd2
	12	147	DreamPd	101	Bright
	13	146	DstGtSet	148	GtFeedBk
	14	157	MegaBeat	138	Bass&Ld2
	15	137	EP&Bass	062	BrasSect
	16	160	Pia&WBas	012	Vibes
	17	001	GrPiano	—	
	18	DR7	STANDARD	—	
BANK 2	21	001	GrPiano	001	GrPiano
	22	050	StrgEns2	001	GrPiano
	23	037	SlapBas1	140	83Organ2
	24	136	HousBass	008	Clavi
	25	005	ElPiano 1	005	ElPiano 1
	26	002	BrPiano	—	
	27	139	83Organ1	—	
	28	159	WowSynt2	—	
BANK 3	31	006	ElPiano 2	081	SquareLd
	32	085	CharanLd	028	CleanGtr
	33	034	FngrBass	003	ElGrand
	34	039	SynBass1	149	ChorsGtr
	35	019	RockOrgn	017	DrawOrgn
	36	149	ChorsGtr	028	CleanGtr
	37	135	12stGtr	—	
	38	025	NylonGtr	—	
BANK 4	41	108	Koto	095	Halo Pd
	42	DR4	ELECTRO	062	BrasSect
	43	036	Fretless	012	Vibes
	44	049	StrgEns1	057	Trumpet
	45	017	DrawOrgn	017	DrawOrgn
	46	004	HnkyTonk	038	SlapBas2
	47	130	ProgLd1	—	
	48	145	RolDrSet	—	
BANK 5	51	082	Saw Ld	053	AahChoir
	52	050	StrgEns2	085	CharanLd
	53	060	Mute Trmp	027	JazzGtr
	54	074	Flute	147	DreamPd
	55	026	SteelGtr	038	SlapBas2
	56	088	Bass &Ld	096	Sweep Pd
	57	150	BaroqStr	—	
	58	132	FunkSE1d	—	
BANK 6	61	104	SciFi	015	TubulBel
	62	109	Kalimba	027	JazzGtr
	63	081	SquareLd	001	GrPiano
	64	080	Ocarina	147	DreamPd
	65	143	SynPizz	029	Mute Gtr
	66	142	ProgLd2	053	AahChoir
	67	129	AtkStrig	—	
	68	141	SexyVoic	—	
BANK 7	71	124	BrdTweet	123	Seashore
	72	DR3	POWER	120	RevCymbl
	73	053	AahChoir	041	Violin
	74	107	Shamisen	157	MegaBeat
	75	154	BrassPad	089	NewAgePd
	76	155	DeepPad	078	Shakhach
	77	051	SynStrg1	—	
	78	144	PchBD&SD	—	
BANK 8	81	058	Trombone	061	FrenchHr
	82	062	BrasSect	048	Timpani
	83	130	ProgLd1	019	RockOrgn
	84	133	SawPad	040	SynBass2
	85	047	Harp	089	NewAgePd
	86	134	SqrPad	079	Whistle
	87	063	SynBras1	—	
	88	068	Bari Sax	—	

Specifications

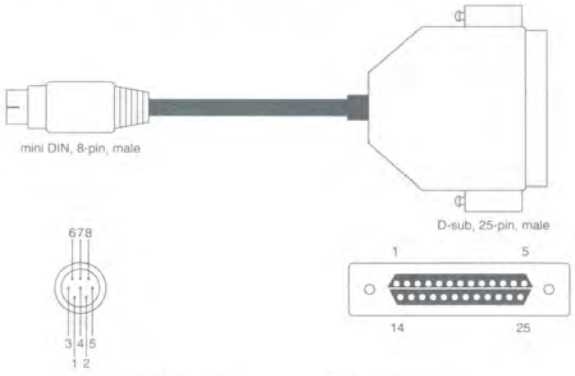
- **Keyboard**
 Full size 61-key keyboard with velocity
- **Maximum Polyphony**
 28 (20+8/DRUMS&PERCUSSION)
- **Number of Tones**
 160 tones + 7 Drum Kits, GM-compatible
- **Multi-timbrality**
 Compose Mode: 16 section
 Performance Mode: 64 patch
 (8 banks of 8 patches each)
- **Function**
 Compose Play Mode:
 Section Select, Single Select
 Performance Play Mode:
 Patch Select
 Compose Edit Mode:
 Single Select, Section Status, Level, Pan, Reverb Level, Transpose, Tuning, Bend Range, Modulation Depth
 Performance Edit Mode:
 (Section Select)
 Single Select, Mode, Level, Pan, Reverb Level, Transpose, Tuning, Bend Range, Modulation Depth, Zone Lo, Zone Hi, Velocity Switch, Hold
 Quick MIDI
 Program Change Volume Control, Pan Control, Controlchange Assign
 System
 Factory Reset, Effect Type, Reverb Type, Depth Lo, Depth Hi, Velocity Curve, Keyboard Shift, Local Control, Unit Tune, Unit Receive Program Change, Unit channel, Keyboard Trans Channel, Velocity Switch, Wheel Assign, Snap Shot, Dump All, Dump Section, Dump System
- **Snapshot**
 Program change (as single select)
 Volume (as level)
- **Demo Play**
 3 songs
- **MIDI Moitor**
 1～16 channel
- **Jacks**
 Line Out (L/R)
 Head Phones
 Hold
 MIDI (IN、OUT)
 Serial Interface
- **Display**
 16×2 BacklitLCD
- **External Dimensins (mm)**
 967 (W) ×208 (D) ×81 (H)
- **Weight (kg)**
 4.1
- **Power Consumption**
 5 (W)

Serial interface connection cable specification

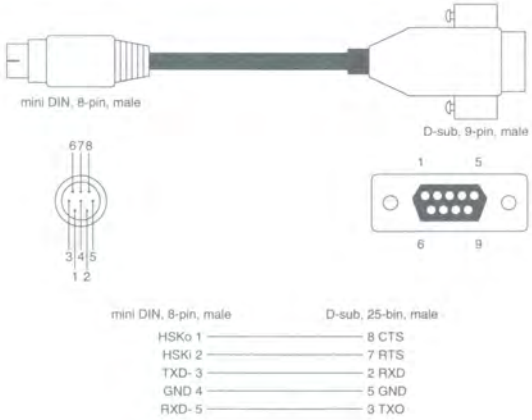
Connection cable for Apple Macintosh series



Connection cable for NEC PC98 series



Connection cable for IBM PC/AT series



GM RESET DATA

SEC EDIT

SNGL No.	001 (SEC10, 26=DR1)
RCV CH	SEC1=01A, SEC2=02A, ... SEC32=16B
LEVEL	100
STATUS	ON
PAN	00
TRANSPOSE	000
TUNE	000
EFFECT LEVL	HI
BEND DEPTH	02
CUTOFF OFST	000
ATTACK OFST	000
RELEAS OFST	000
ZONE LO	C-2
ZONE HI	G8
MOD WHL VIB	127
PRESS VIB	000
RCV HOLD	ON
TEMP TYPE	001
TEMP KEY	C

KC20 Exclusive Format

No.	Description	Value
1	Exclusive	F0H
2	Kawai ID	40H
3	Channel no.	0nH (n=0~FH)
4	Function no.	0~7FH
5	Group no.	00H
6	Machine no.	09H
*	data	0~7FH
*	data	0~7FH
*	EOX	F7H

Group [A] Parameter Send

[A-1] System Functions

Format:F0 40 0n 10 00 09 00 <NO.> 00 <DH> <DL> F7

0n=UNIT RCV CH (n=0~FH)

Data(8bit)=16x<DH>+<DL>

PARAMETER		No.	DATA
EFtype	(EFFECT TYPE)	00	[00H=REV1]~[05H=REV6]
RVtime	(REVERB TIME)	01	[00H=1]~[09H=10]
PREdly	(REVERB PRE DELAY)	02	[00H=0]~[0AH=10]
DpthLo	(REVERB DEPTH LO)	03	[00H=1]~[7FH=128]
DpthHi	(REVERB DEPTH HI)	04	[00H=1]~[7FH=128]
VelCrv	(VELOCITY CURVE)	05	[00H=1]~[09H=10]
KyShft	(KEY SHIFT)	06	[00H=-12]~[0CH=0]~[18H=+12]
Local	(LOCAL)	07	00H=OFF/01H=ON
Tune	(UNIT TUNE)	08	[00H=-64] ~ [40H=0]~[7FH=+63]
RcvPrg	(UNIT RCV PGM)	09	00H=OFF/01H=ON
KybdCh	(KEYBOARD CHANNEL)	0A	00H=SEC/01H=UNIT
VelSW	(VELOCITY SWITCH)	0B	[00H=0]~[7FH=127]
Assign	(ASSIGN)	0C	[00H=0]~[77H=119]
OctShift	(OCTAVE SHIFT)	0D	00H=←(-30CT)/01H=<(-20OCT) 02H=[(-10CTR)/03H=SP 04H=](+10CT)/05H=>(+20CT) 06H=→(+30CT)
ModeChange	(MODE CHANGE)	0E	00H=COMPOSE PLAY MODE/ 01H=PERFORMANCE PLAY MODE

ex) Send System Functions EFtype(REV1)

→ F0 40 00 10 00 09 00 00 00 00 00 F7

Ch1 EPtype REV1

[A-2] Performance Mode Section Functions

Format:F0 40 0n 10 00 09 01 <NO.> <Sec> <DH> <DL> F7

0n = UNIT RCV CH(n=0~FH)

<Sec>=Section No.(00H~01H)

Data(8bit)=16x<DH>+<DL>

PARAMETER	No.	DATA
Single(SNGL No.)	00	[00H=1]~[9FH=160](SNGL)/ [A0H=DR1]~[A6H=DR7](DRUMS)
Seting(SETTING)	01	00H=1/01H=2

ex) Send Performance Mode Section Functions Single(160)

→ F0 40 00 10 00 09 01 00 00 09 0F F7

Ch1 Single 160

[A-3] Performance Mode Setting Functions

Format:F0 40 0n 10 00 09 02 <NO.> <Sec> <DH> <DL> F7

0n=UNIT RCV CH(n=0~FH)

<Sec>=Setting No.(00H~01H)

Data(8bit)=16x<DH>+<DL>

PARAMETER		No.	DATA
Mode	(MODE)	00	OFF=00H/ON=01H/OCT1=02H/ 0CT2=03H/CHRS1=04H/CHRS2=05H
Level	(LEVEL)	01	[00H=0]~[7FH=127]
Pan	(PAN)	02	[00H=L64]~[40H=0]~[7FH=R63]/80H=RND
Rev	(REVERB)	03	00H=LO/01H=HI
Trans	(TRANSPOSE)	04	[00H=-24]~[30H=+24]
Tune	(TUNE)	05	[00H=-64]~[7FH=+63]
BndRng	(BEND RANGE)	06	[00H=0]~[0CH=12]
ModDep	(MODULATION DEPTH)	07	[00H=0]~[3FH=63]
ZoneLo	(ZONE LO)	08	[00H=C-2]~[7FH=G8]
ZoneHi	(ZONE HI)	09	[00H=C-2]~[7FH=G8]
VeloSW	(VELOCITY SWITCH)	0A	00H=ALL/01H=SOFT/02H=LOUD
Hold	(RECEIVE HOLD)	0B	00H=OFF/01H=ON

ex) Send Performance Mode Setting Functions Mode(OCT1)

→ F0 40 00 10 00 09 02 00 00 00 02 F7

Ch1 Mode oct1

[A-4] Compose Mode Section Functions

Format:F0 40 On 10 00 09 03 <No.> <Sec> <DH> <DL> F7

On=UNIT RCV CH(n=0~FH)

<Sec> = Section No.(00H~oFH)

Data(8bit)=16x<DH>+<DL>

PARAMETER	No.	DATA
Single(SNGL No.)	00	[00H=1]~[9FH=160](SNGL)/ [A0H=DR1]~[A6H=DR7](DRUMS)
Seting(SETTING)	01	[00H=1]~[0FH=16]

ex) Send Compose Mode Section Functions Single(160)

→ F0 40 00 10 00 09 03 00 00 09 0F F7

Ch1 Single 160

[A-5] Compose Mode Setiing Functions

Format:F0 40 On 10 00 09 04 <No.> <Set> <DH> <DL> F7

On=UNIT RCV CH(n=0~FH)

<Set>=Setting No.(00H~0FH)

Data(8bit)=16x<DH>+<DL>

PARAMETER	No.	DATA
Status(STATUS)	00	00H=OFF/01H=ON/02H=SOLO
Level(LEVEL)	01	[00H=0]~[7FH=127]
Pan(PAN)	02	[00H=L64]~[40H=0]~[7FH=R63]/80H=RND
Rev(REVERB)	03	00H=LO/01H=HI
Trans(TRANSPOSE)	04	[00H=-24]~[30H=+24]
Tune(TUNE)	05	[00H=-64]~[7FH=+63]
BndRng(BEND RANGE)	06	[00H=0]~[0CH=12]
ModDep(MODULATION DEPTH)	07	[00H=0]~[3FH=63]

ex) Send Compose Mode setting Functions Status(SOLO)

→ F0 40 00 10 00 09 04 00 00 00 02 F7

Ch1 Status SOLO

```
Group [B] Data Dump
  [B-1]  Dump System Functions (Dump SY)
         Format:F0 40 0n 20 00 09 00
                <Data(00)H> <Data(00)L> <Data(01)H> <Data(01)L>
                <Data(02)H> <Data(02)L> <Data(03)H> <Data(03)L>
         ----------------------          <Data(0E)H> <Data(0E)L>f7
         On=UNIT RCV CH(n=0~FH)
         Data(8bit)=16x<DH>+<DL>
         (Data:System Data)

  [B-2]  Dump Performance Mode Section Functions
         Format:F0 40 0n 20 00 09 01
                <Data1(00)H> <Data1(00)L> <Data1(01)H> <Data1(01)L> <Data2(00)H>
                <Data2(00)L> <Data2(01)H> <Data2(01)L> F7
         Section No.(00H~01H)
         On=UNIT RCV CH(n=0~FH)
         Data(8bit)=16x<DH>+<DL>
         (Data:Performance Mode Section Data)

  [B-3]  Dump Performance Mode Setting Functions
         Format:F0 40 0n 20 00 09 02
                <Data1(00)H> <Data1(00)L> <Data1(01)H> <Data1(01)L>
                <Data1(02)H> <Data1(02)L> <Data1(03)H> <Data1(03)L>
                ------------------------- <Data1(0B)H> <Data1(0B)L>
                <Data2(00)H> <Data2(00)L> <Data2(01)H> <Data2(01)L>
                <Data2(02)H> <Data2(02)L> <Data2(03)H> <Data2(03)L>
                ------------------------- <Data2(0B)H> <Data2(0B)L> F7
         Setting No.(00H~01H)
         On=UNIT RCV CH(n=0~FH)
         Data(8bit)=16x<DH>+<DL>
         (Data:Performance Mode Setting Data)

  [B-4]  Dump Compose Mode Section Functions
         Format:F0 40 0n 20 00 09 03
                <Data1(00)H> <Data1(00)L> <Data1(01)H> <Data1(01)L>
                <Data2(00)H> <Data2(00)L> <Data2(01)H> <Data2(01)L>
                                          :
                                          :
                <Data16(00)H> <Data16(00)L> <Data16(01)H> <Data16(01)L> F7
         Section No.(00H~0FH)
         On=UNIT RCV CH(n=0~FH)
         Data(8bit)=16x<DH>+<DL>
         (Data:Compose Mode Section Data)
```

```
[B-5]  Dump Compose Mode Setting Functions
       Format:F0 40 0n 20 00 09 04
              <Data1(00)H> <Data1(00)L> <Data1(01)H> <Data1(01)L>
              <Data1(02)H> <Data1(02)L> <Data1(03)H> <Data1(03)L>
              ------------------------- <Data1(07)H> <Dala1(07)L>
              <Data2(00)H> <Data2(00)L> <Data2(01)H> <Data2(01)L>
              <Data2(02)H> <Data2(02)L> <Data2(03)H> <Data2(03)L>
              ------------------------- <Data2(07)H> <Data2(07)L>
                           :
                           :
              <Data16(00)H> <Data16(00)L> <Data16(01)H> <Data16(01)L>
              <Data16(02)H> <Data16(02)L> <Data16(03)H> <Data16(03)L>
              -------------------------- <Data16(07)H> <Data16(07)L> F7

       Setting No.(00H~0FH)
       On=UNIT RCV CH (n=0~FH)
       Data(8bit)=16x<DH>+<DL>
       (Data:Compose Mode Setting Data)

[B-6]  Dump Section Functions and Setting Functions(DumpSC)
  [B-6-1]In Performance Mode
         Format:[B-2]+[B-3]
  [B-6-2]In Compose Mode
         Format:[B-4]+[B-5]

[B-7]  Dump All(DumpAL)
       Format:F0 40 0n 21 00 09
               [B-1] (W/0 F0 40 0n 20 00 09 00)
              +[B-4] (W/0 F0 40 0n 20 00 09 03)
              +[B-5]'
              +([B-2]+[B-3])x64(Patch)
               (W/0 F0 40 0n 20 00 09 01, W/0 F0 40 0n 20 00 09 02) F7
       On=UNIT RCV CH(n=0~FH)

[B-5]  Dump Compose Mode Setting Functions for Dump All
       Format:<Data1(00)H> <Data1(00)L> <Data1(01)H> <Data1(01)L>
              <Data1(02)H> <Data1(02)L> <Data1(03)H> <Data1(03)L>
              ------------------------- <Data1(07)H> <Data1(07)L>
              00 00 00 00 00 00 00 00 (8Byte Dummy Data)
              <Data2(00)H> <Data2(00)L> <Data2(01)H> <Data2(01)L>
              <Data2(02)H> <Data2(02)L> <Data2(03)H> <Data2(03)L>
              ------------------------- <Data2(07)H> <Data2(07)L>
              00 00 00 00 00 00 00 00 (8Byte Dummy Data)
                                    :
                                    :
              <Data16(00)H> <Data16(00)L> <Data16(01)H> <Data16(01)L>
              <Data16(02)H> <Data16(02)L> <Data16(03)H> <Data16(03)L>
              -------------------------- <Data16(07)H> <Data16(07)L>
              00 00 00 00 00 00 00 00 (8Byte Dummy Data)
       Data(8bit)=16x<DH>+<DL>
       (Data:Compose Mode Setting Data)
```

```
Group [C] Receive only Special Information
  [C-1]  K11/GMega Bank Select
         Format:F0 40 0n 10 00 08 00 00 00 00 00 F7 Receive as GM System On
                (GM bank select of K11/GMega)
         On=UNIT RCV CH (n=0~FH)

  [C-2]  GM System On
         Format:F0 7E 7F 09 01 F7

Group [D] Data Request
  [D-1]  System Functions Data([B-1]) Request:
         Format:F0 40 0n 00 00 09 00 F7
         On=UNIT RCV CH (n=0~FH)

  [D-2]  Performance Mode Data([B-2]+[B-3]) Request
         Format:F0 40 0n 00 00 09 01 F7
         0n=UNIT RCV CH (n=0~FH)

  [D-3]  Compose Mode Data([B-4]+[B-5]) Request
         Format:F0 40 0n 00 00 09 02 F7
         0n=UNIT RCV CH (n=0~FH)

  [D-4]  All Data([B-7]) Request
         Format:F0 40 0n 01 00 09 F7
         0n=UNIT RCV CH (n=0~FH)

Group[E] Write Error
  [E-1] Write Error
         Format:F0 40 0n 41 F7
         0n=UNIT RCV CH (n=0~FH)

Group[F] Machine ID Request
  [F-1] Machine ID Request
         Format:F0 40 0n 60 F7
         0n=UNIT RCV CH (n=0~FH)

Group[G] Machine ID Acknowledge
  [G-1] Machine ID Acknowledge
         Format:F0 40 0n 61 00 09 F7
         0n=UNIT RCV CH (n=0~FH)
```

Glossary of Terms

MIDI

MIDI is an abbreviation of "Musical Instrument Digital Interface," a set of standards that enables electronic instruments to exchange performance information. Instruments that accord with MIDI standards can be connected via MIDI cables to send data or play each other, regardless of the instrument's manufacturer.

MIDI Interface

This is an expansion device for connecting a MIDI jack to a personal computer. Various types include those that are installed in an expansion slot as well as those that connect to an RS-232C port (IBM and NEC) or RS-422 port (Macintosh).

MIDI Keyboard

This is a keyboard instrument that conforms to MIDI standards, such as a digital piano, synthesizer, or master keyboard.

MIDI Cable

This is the type of cable used for linking MIDI instruments to each other.

MIDI Channel

A MIDI instrument uses channels to determine whether incoming data is destined for itself. In other words, if the channel assigned to the instrument is the same as the MIDI channel for the data being sent, the data is accepted; otherwise it is ignored. The concept is the same as for TV channels.

GM (General MIDI)

Because each manufacturer previously sold its own independent type of sound sources, it used to require tremendous effort to convert data made with one type to a format for use with another type. GM standards were created to resolve this kind of problem. Data made with a sound source conforming to GM standards can be used to re-create the same tones on GM-compatible sources of other makes.

SMF (Standard MIDI File)

SMF is the abbreviation for "Standard MIDI File," which is a set of standards devised to ensure song data compatibility among equipment from different makers. There are three types: 0, 1, and 3.

System Exclusive Data

Various types of signals are defined in MIDI, but there is no MIDI standardization for detailed functions such as tone editing. To handle functions like this, each manufacturer uses MIDI signals for supporting its own original functions, and these signals are called system exclusive data, or SysEx messages. Because SysEx messages are unique to each manufacturer, there is no compatibility from one maker to another.

MIDI Control Change

MIDI data includes a wide variety of data in addition to information on when a key is played or released, such as volume, vibrato, panning, hold, and other operations during performances. These are collectively referred to as MIDI control changes, with functions defined for each assigned number.

Program Change

Most MIDI instruments can be programmed with a multiple settings and tones. These programs can be switched by messages from the controlling device, and these messages are called program changes.

Reverb

This is the resonating effect that you can hear in places like tunnels. An echo-like effect, on the other hand, is generally called a delay effect.

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Digital Synthsizer

Date : Aug. 1 1993

Model : KC20

MIDI Implementation Chart

Version : 1.0

Function. . .		Transmission	Reception (Compose Mode)	Reception (Performance Mode)	Remarks
Basic Channel	Default	1~16	1~16	1~16	Data is stored even after power is OFF.
	Changed	1~16	1~16	1~16	
Mode	Default	X	mode 3	mode 3	
	Messages	X	X	X	
	Altered	********	********		
Note Number		0~127	0~127	0~127	
	Sound range	********			
Velocity	Note ON	○	○	○	
	Note OFF	X 8n, V=64	X 8n, 9n. V=0	X 8n, 9n. V=0	
After Touch	For key	X	X	X	
	For channel	X	○	○	
Pitch bender		○ (7bit)	○ (7bit)	○ (7bit)	
Control Changes	0, 32	○	○	X	Bank select
	1	○	○	○	Modulation
	6	X	○	X	Data entry
	7	○	○	X	Main volume
	10	○	○	X	Panpot
	11	X	○	○	Expression
	64	○	○	○	Hold 1 (Dumper)
	67	X	○	○	Soft pedal
	69	X	○	○	Hold 2 (=Hold 1)
	91	○	○	X	Effect
	120	X	○	○	All Sound OFF
	121	X	○	○	Reset All Controllers
	100, 101	X	○	X	RPN
Program Change		○ 0~63 *1)	○ *2)	○ *2)	
		********	0~127	0~63	
System exclusive		○	○	○	
System Common	: Song Position	X	X	X	
	: Song Select	X	X	X	
	: Tune	X	X	X	
System Real Time	: Clock	X	X	X	
	: Commands	X	X	X	
Others	: Local ON/OFF	X	○	○	
	: All notes OFF	○	○ (123~127)	○ (123~127)	
	: Active Sensing	○	○	○	
	: Reset	X	X	X	
Notes		RPN #0:Pitch Bender sensitivity #1:Fine tuning #2:Coarse tuning Values are given by data entry *1) Performance patch No.	* Control range values of 0 to 119 and program changes (0 to 127) can be transmitted in the Quick MIDI mode. *2) Can be enabled or disabled by panel or SysEx settings		

Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO

Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO

○ : Yes

X : No

KAWAI

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